VERINT
VIDEO INTELLIGENCE SOLUTIONS™

Nextiva S1800e Series

User Guide

For

S1808e and S1816e Series Encoder Firmware Version 2.4 SP5

S1801e and S1802e Series Encoder and Decoder Firmware Version 2.2 SP5

December 19, 2012

Copyright Notice

© 2012 Verint Systems Inc. All Rights Reserved Worldwide. www.verint.com/videosolutions

Unauthorized use, duplication, or modification of this document in whole or in part without the written consent of Verint Systems Inc. is strictly prohibited. By providing this document, Verint Systems Inc. is not making any representations regarding the correctness or completeness of its contents and reserves the right to alter this document at any time without notice. Features listed in this document are subject to change.

Verint Systems Inc. does not warrant, guarantee or make any representation regarding the use or the results of the use of the information, links, tools, and materials in terms of the accuracy, reliability, quality, validity, stability, completeness, currentness, or otherwise of its content or products. The entire risk as to the use, results and performance of information, links, tools and materials provided or referenced herein is assumed by the user. Verint Systems Inc. shall not be liable for damages resulting from the use, misuse or unlawful use of the information, links, tools, and materials contained or referenced herein.

The Verint Systems Inc. products are protected by one or more of the following U.S., European or International Patents: USPN 5,659,768; USPN 5,689,442; USPN 5,790,798; USPN 6,278,978; USPN 6,370,574; USPN 6,404,857; USPN 6,510,220; USPN 6,724,887; USPN 6,751,297; USPN 6,757,361; USPN 6,782,093; USPN 6,839,667; USPN 6,952,732; USPN 6,959,078; USPN 6,959,405; USPN 7,047,296; USPN 7,149,788; USPN 7,155,399; USPN 7,203,285; USPN 7,216,162; USPN 7,219,138; USPN 7,254,546; USPN 7,281,173; USPN 7,284,049; USPN 7,325,190; USPN 7,466,816; USPN 7,478,051; USPN RE40,634; and other provisional rights from one or more of the following Published US Patent Applications: US 11/394,408; US 11/771,499; US 11/396,514; US 11/772,440; US 11/565,943; US 11/565,946; US 11/565,948; US 11/540,739; US 11/540,086; US 11/541,313; US 11/541,252; US 11/540,282; US 11/529,947; US 11/540,785; US 11/540,736; US 11/540,904; US 11/540,353; US 11/608,340; US 11/608,350; US 11/608,358; US 11/567,808; US 11/692,983; US 11/693,933; US 11/693,923; US 11/693,828; US 11/567,852; US 11/608,440; US 12/015,621; US 11/540,322; US 11/924,201; US 11/616,490; US 11/621,134; US 11/752,458; US 11/712,933; US 11/824,980; US 11/729,185; US 11/804,748; US 11/831,260; US 11/395,992; US 11/359,319; US 11/359,195; US 11/359,357; US 10/832,509; US 11/742,733; US 11/831,257; US 11/831,250; US 11/691,530; US 11/479,267; US 11/529,942; US 11/768,349; US 11/540,281; US 10/633,357; US 11/693,899; US 11/479,056; US 11/529,132; US 11/540,320; US 11/037,604; US 11/529,842; US 11/540,171; US 11/478,714; US 11/529,946; US 11/868,656; US 11/776,659; US 11/090,638; US 11/410,004; US 10/771,315; US 10/771,409; US 11/540,900; US 11/528,267; US 12/118,781; and other U.S. and International Patents and Patents Pending.

VERINT, the VERINT logo, ACTIONABLE INTELLIGENCE, POWERING ACTIONABLE INTELLIGENCE, WITNESS ACTIONABLE SOLUTIONS, STARGATE, RELIANT, VANTAGE, X-TRACT, NEXTIVA, ULTRA, AUDIOLOG, WITNESS, the WITNESS logo, IMPACT 360, the IMPACT 360 logo, IMPROVE EVERYTHING, EQUALITY, CONTACTSTORE, and CLICK2STAFF are trademarks or registered trademarks of Verint Systems Inc. or its subsidiaries. Other trademarks mentioned are the property of their respective owners.

Device Compliance

For compliance information, visit https://online.verint.com and refer to the device declaration of conformity.

Contents

Contents 3

Safety 7

Preface 8

Contacting Verint 8
Contacting Service and Support 8
Documentation and Firmware 9

Summary of Changes 10

Revision 10 - October 2012 10
Revision 9- June 2012 10
Updates 10
Revision 8 - March 2012 10
New Feature 10
Revision 7 - August 2011 10
What's New 10
Revision 6 - August 2011 11
Revision 5 - June 2011 11
What's New 11
Updates 11
Revision 4 - December 2010 11
Updates 11
Revision 3 - September 2010 12
Revision 2 - February 2010 12
What's New 12
Revision 1- October 2009 12
What's New 12

Chapter 1: S1800e Series Overview 14

Hardware Overview 15
S1801e and S1802e Series Encoders and Decoders 15
Single- and Dual-Port Terminal Block 17
Product Dimension and Weight 17
Multi-Port Devices 17
Multi-Port Terminal Block 20
Product Dimension and Weight 21
Nextiva Onboard Analytics 21
Security 21

Frame Rate and Performance for the Single- and Dual-Port Devices 22
Supported Resolution 22
Supported Frame Rates 22
Supported Decoding Resolution and Tile Layout 23
Supported Tile Layout 23
Multiport Supported Resolutions 24
Multiport Supported Frame Rates 25
Supported Audio Formats 25
Understanding the LED Indicators 25
System Status LED 26
Video Status LEDs 26
RTSP Support 27
Configuring the Input/Output Terminals 28

Chapter 2: Installing the Single-and Dual-Port Devices 29

Package Contents 30
Optional Accessories 30
Installing on a Flat Surface 30
Installing in a Rack 30
Powering the Devices 32
Powering the S1801e-POE 33
Connecting Analog Cameras 34
Connecting Network Cables 34
Connecting a Serial Device 35
Connecting RS-232 Devices 35
Connecting RS-422/485 Four-Wires 36
Connecting RS-485 Devices 38
Connecting Audio Inputs 39
Connecting Audio Output 39

Chapter 3: Installing the S1800e Series Multiport Devices 41

Package Contents 42
Optional Accessories 42
Installing on a Flat Surface 42
Installing in a Rack 42
Powering the Multiport Devices 43
Connecting Analog Cameras 44
Connecting Network Cables 45
Connecting a Serial Device 45
Connecting RS-232 Devices 46
Connecting RS-422/485 Four-Wires 47
Connecting RS-485 Devices 49
Connecting Audio Inputs 50

Connecting Audio Output 50

Chapter 4: Using SConfigurator for Configuration 52

Setting SConfigurator 53
Discovering Devices 54
IP Address Configuration 55
Setting a DHCP IP Address 55
Setting a Static IP Address 56
Configuring the Serial Ports 57
Configuring the RS-232 Serial Port Using SConfigurator 58
Configuring the RS-422/485 Serial Port Using SConfigurator 59
Setting the H.264 Encoding Mode for the S1816e-SP or S1816e-SR 61
Setting the Video Standard 62
Video Profile 63
Configuring the Device Video Properties 64
Configuring the Input Properties 65
Setting the SNMP Properties 66
Audio Properties 68
Setting the Audio Sampling Rate 68
Setting the Audio Encoder Properties 69
Setting the Audio Decoder Properties 70

Chapter 5: Using the Web Interface for Configuration 72

IP Address Configuration 73
Setting a DHCP IP Address 73
Setting a Static IP Address 75
Configuring the Serial Ports 77
Configuring the RS-232 Serial Port 77
Configuring the RS-422/485 Serial Port 78
Setting the Video Standard 79
Configuring the Encoder Properties 80
Video Profile 82
Configuring the Encoder Properties 83
Configuring the Input Properties 84
Configuring the Camera Tampering Properties 85
Configuring the Motion Detection Properties 86
Configuring the Decoder Properties 87
Configuring the Video Output Properties 88
Setting the SNMP Properties 90
Viewing MIB Information 91
Audio Properties 92
Setting the Audio Sampling Rate 92
Setting the Audio Input Properties 93

Setting the Audio Encoder Properties 94
Setting the Audio Output Properties 95
Setting the Audio Decoder Properties 95
Activating Nextiva Onboard Analytics 96
Configuring Nextiva Onboard Analytics 97
Activating Agent Vi Video Analytics 98
Configuring Agent Vi Video Analytics 100
Setting the On-Screen Display for the Decoders 101
Recording to the Storage Device 102

Chapter 6: Maintaining and Troubleshooting the Device 104

Firmware Upgrade 105
Upgrading Using SConfigurator 105
Upgrading Using the Web Interface 106
Performing a Batch Firmware Update 106
Device Reboot 107
Rebooting the Device Using SConfigurator 107
Rebooting the Edge Device 107
Rebooting the Device from the Front Panel 107
Factory Default Settings 107
Restoring the Factory Default Settings Using SConfigurator 108
Restoring the Factory Default Settings 108
Restoring the Factory Default Settings from the Front Panel 108
Troubleshooting 109
Using Recovery Mode 109
Performing a Hardware Reset 109
Losing Connection to a Camera 110
SConfigurator cannot find the Device 110
Quality of the Video is Bad 111

Chapter A: Specification and Configuration 112

Technical Specification 113
Video 113
Network 114
Serial and USB Ports 114
Alarm 115
Audio 115
Power 115
Physical 116
Management 116
Optional Accessories 116
Warranty 117
Factory Default Configuration 117

Safety

Always observe the following precautions to reduce the risk of injury and equipment damage:

- The S1800e series devices are for indoor use only.
- Do not connect the S1800e series devices to any cabling (BNC,HDMI, PoE or otherwise) that runs outdoor.
- The S1800e series devices should be placed on a secure flat surface or mounted using optional hardware.
- The S1800e series devices should only be operated in a clean, dry environment.
- For the multiport encoders, the operating temperature is 32ºF to 131ºF (0ºC to 55ºC), with maximum humidity at 95% non-condensing.
- For single and dual port devices except the S1801e-POE, the the operating temperature is 32ºF to 140ºF (0ºC to 60ºC), with maximum humidity at 95% non-condensing.
- For the single port S1801e-POE, the operating temperature is 32ºF to 131ºF (0ºC to 55ºC), with maximum humidity at 95% non-condensing.
- Only use the recommend power cable for powering the S1800e series devices.
- Do not install the S1800e series devices in an enclosed cabinet or other small area without ventilation.

Preface

The Nextiva® S1800e User Guide presents information and procedures on installing, configuring, and using the Nextiva encoders and decoders.

Contacting Verint

Verint® Systems is a leading provider of Actionable Intelligence® solutions for enterprise workforce optimization and security intelligence. Our solutions help governments and enterprises make sense of the vast information they collect in order to achieve their performance and security goals. Today our solutions are used by more than 10,000 organizations in 150 countries. Verint is headquartered in Melville, New York, with offices worldwide and 2500 dedicated professionals around the globe. You can read about Verint Video Solutions and get marketing material and product information at www.verint.com/videosolutions.

To contact us for sales, pricing and general inquiries, refer to the coordinates below:

Location	Contact Information
Americas	videoinfo@verint.com +1 866-639-8482 for Nextiva VMS and Nextiva Intelligent Edge Devices +1-800-638-5969 for Nextiva Intelligent DVRs
Europe, Middle East, and Africa	marketing.emea@verint.com +44 (0) 1932 839500
Asia/Pacific	marketing.apac@verint.com + 852 2797 5678

Contacting Service and Support

To request the latest versions of firmware and software or to download other product-related documents, you need access to the Verint Video Intelligence Solutions partner extranet. To register, go to https://online.verint.com.

If you encounter any type of problem after reading this guide, contact your local distributor or Verint representative. For the main service and support page on the Verint web page, visit www.verint.com/videoservice. For assistance, use our online web form at http://verint.com/video_solutions/info/57008 or contact the customer service team:

Location	Contact Information
USA and Canada	+1-888-585-7059 CLM_Customersupport@verint.com

Location	Contact Information
	Open 9:00 am to 5:00 pm (EST) Monday to Friday
Central and Latin America	+1-303-254-7005 vissupport@verint.com Open 9:00 am to 5:00 pm (EST) Monday to Friday
Europe, Middle East, and Africa	+44 (0) 845-843-7333 customersupport.emea@verint.com Open 8:30 am to 5:30 pm (GMT) Monday to Friday
Asia/Pacific	Hong Kong: +852 2797 5678 Singapore: +65-68266099 APAC_VIS_Services@verint.com Open 9:00 am to 6:30 pm (Monday to Thursday) 9:00 am to 5:30 pm (Friday)

Documentation and Firmware

- Download the documentation of Nextiva IP cameras and encoders from: www.verint.com/manuals
- Download the documentation of the Nextiva VMS software and the latest firmware from the extranet: https://online.verint.com.
- Send your questions or comments on the current document, or any other Nextiva user documentation, to our documentation feedback team at documentationfeedback@verint.com

Summary of Changes

This section lists technical updates and new material added to the Nextiva S1800e Series User Guide.

Revision 10 - October 2012

This is the tenth edition of the Nextiva S1800e Series User Guide.

Revision 9- June 2012

This is the ninth edition of the Nextiva S1800e Series User Guide.

Updates

- Device Overview now show the rear of both the S1808e and the S18016e.

Revision 8 - March 2012

This is the eight edition of the Nextiva S1800e Series User Guide.

New Feature

- Support for AgentVi Video Analytics on the multiport encoders.

Revision 7 - August 2011

This is the seventh edition of the Nextiva S1800e Series User Guide.

What's New

- Web Server port text box to allow you to configure the http port number to use.
- DHCP Timeout text box allows you to set the timeout value.

Revision 6 - August 2011

This is the sixth edition of the Nextiva S1800e Series User Guide.

Revision 5 - June 2011

This is the fifth edition of the Nextiva S1800e Series User Guide.

What's New

- Control of Pelco-D Type PTZ dome cameras connected to a Nextiva S1800e encoder is now supported through the Web Interface.
- New SNMP Trap for camera tampering.
- Support for Real Time Streaming Protocol (RTSP).
- S1808e, S1816e, S1808e-A S1816e-A and S1816e-SP:
  - Supports resolutions up to D1.
- S1801e, S1801e-R or S1801e-R-HD, S1802e, S1808e-A, S1816e-A:
  - Support for µ-LAW audio codec.
- S1801e-R or S1801e-R-HDMI:
  - Support for decoding video from Nextiva S5000 IP Cameras
  - S1801e-R-HDMI: New 3 × 2 layout

Updates

- Nextiva Onboard Analytics licensing page has been updated.

Revision 4 - December 2010

This is the fourth edition of the Nextiva S1800e Series User Guide.

Updates

- The U.S. Environmental Protection Agency (EPA) announced that as a result of major success in moving the external power adapter market towards greater and more sustainable energy efficiency, effective December 31, 2010, the EPA is cancelling the Energy Star program for

external power supplies (EPS). To conform to the EPA requirements, Verint is now stating the efficiency level for all EPS.

Revision 3 - September 2010

This is the third edition of the Nextiva S1800e Series User Guide.

Revision 2 - February 2010

This is the second edition of the Nextiva S1800e Series User Guide.

What's New

- S1816e-SP 16-video input encoder, a cost effective version with performance of up to 4CIF/15fps
- TCP/IP communication protocol support
- Live Video through the Web Interface

Revision 1- October 2009

This is the first edition of the Nextiva S1800e Series User Guide.

What's New

- 8 or 16-video input encoders with up to triple streaming
- H.264 and MPEG-4 video up to 4CIF/30fps providing maximum video quality for minimum data transfer and storage
- Compact design accommodating up to 16 video streams in a 1U, 6-inch (15-cm) deep enclosure
- Seamless integration with IT infrastructure including SNMP support and Dual LAN interface
- Sustainable, environmentally friendly solution with very low power consumption
- Seamless integration with Nextiva Video Management Software for easy configuration and management
- Intuitive Web Interface for configuring and troubleshooting the encoder
- 8 or 16 dry contacts inputs and 2 or 4 relay outputs for alarm configuration
- On-board motion detection

What's New

- Default serial port settings compatible with the most popular camera data port configuration
- RS-232 (max. 230Kbps) pluggable screw-terminal strip for integration with access control systems
- RS-422/485 2/4 wires (max. 230Kbps) pluggable screw-terminal strip for motorized domes and camera

Chapter 1

S1800e Series Overview

The Nextiva® encoders are enterprise-class, H.264 enabled video encoders designed for large-scale, geographically distributed operations. These powerful video devices offer a comprehensive feature set that includes full frame rate with high resolution video on all ports.

The Nextiva® decoders incorporate advanced H.264 decompression technology to deliver superior video quality and excellent performance in enterprise, critical infrastructure, and other video surveillance applications. Designed for use with all Nextiva S1800e series single- and multi-port encoders and S5000 IP cameras, the decoders are ideal for integration in distributed networks, including point-to-point applications. These compact decoders supports four H.264 video streams, displaying up to six tiles on traditional CCTV monitors and high-definition LCD or plasma monitors

The following topics are discussed:

Hardware Overview 15
Security 21
Frame Rate and Performance for the Single- and Dual-Port Devices 22
Multiport Supported Resolutions 24
Multiport Supported Frame Rates 25
Supported Audio Formats 25
Understanding the LED Indicators 25
RTSP Support 27
Configuring the Input/Output Terminals 28

Hardware Overview

The ® S1800e series devices consist of the following models:

Single and Dual Port devices

- S1801e
- S1801e-PoE
- S1801e-R
- S1801e-R-HDMI
- S1802e

Multiport devices

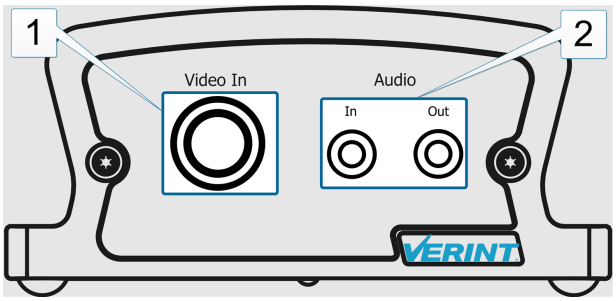
- S1808e
- S1808e-A
- S1816e
- S1816e-A
- S1816e-SP
- S1816e-SR

CAUTION: The S1800e series devices are enclosed in a non-weatherproof casing and should be placed in a location that is not exposed to the outdoor environment.

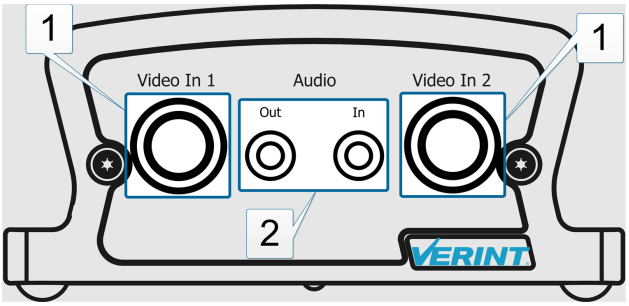
S1801e and S1802e Series Encoders and Decoders

The S1800e series single- and dual-port encoders (S1801e, S1801e-PoE and S1802e.)couple superior video resolution up to D1 with dramatically lower bitrate using H.264 video compression, reducing bandwidth and storage utilization up to 50% over MPEG-4. With support for up to three H.264 video streams at D1/30fps and storage on the edge - a failover mechanism that ensures video is recorded in case connection with the management software is lost - these devices deliver the high reliability of Verint's third-generation encoders, plus IT-friendly features, easy implementation and maintenance, and an environmentally friendly design.

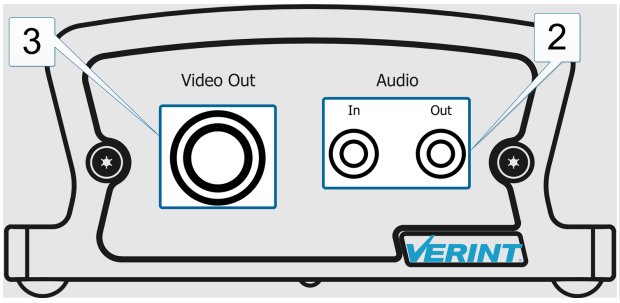
The S1800e series decoders (S1801e-R and S1801e-R-HD)are designed for use with all S1800e series single- and multi-port encoders and the S5000 IP Cameras and are ideal for integration in distributed networks, including point-to-point applications. With excellent video quality - up to D1/30fps on every stream - the S1801e-R provides the high reliability of Verint's third-generation edge devices, plus IT-friendly features, easy implementation and maintenance, and a compact, environmentally friendly design.



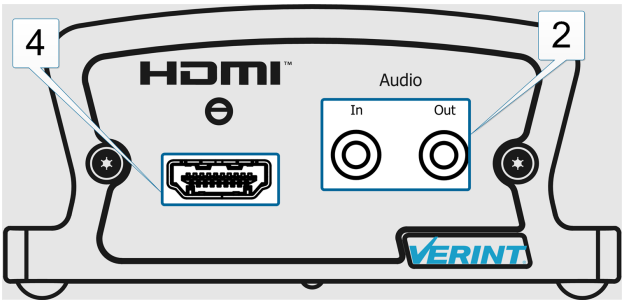
S1801e/S1801e-POE



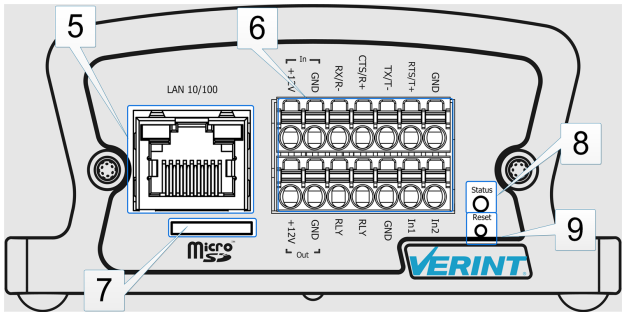
S1802e



S1801e-R



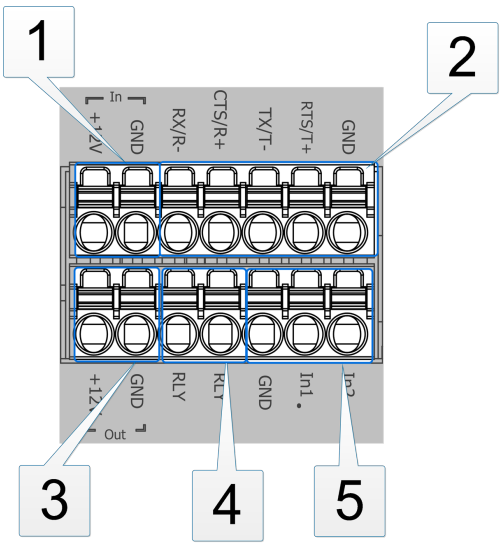
S1801e-R-HD



Description

1. Video input
2. Audio input and output
3. Video output
4. HDMI output
5. One RJ-45 network connector
6. Terminal Block
7. One MicroSD card slot (Only available on encoders)
8. Status LED
9. Reset button

Single- and Dual-Port Terminal Block



Description

1. One 12V DC input
2. One RS-232/422/485
3. One 12V DC output (Only available on the S1801e-POE)
4. One Relay output
5. Two Dry contacts

Product Dimension and Weight

The S1801e and S1802e have the following dimensions:

- 4.2L × 3.5W× 1.7H in. (106L × 90W × 42H mm)
- 9.2 oz. (260 g)

Multi-Port Devices

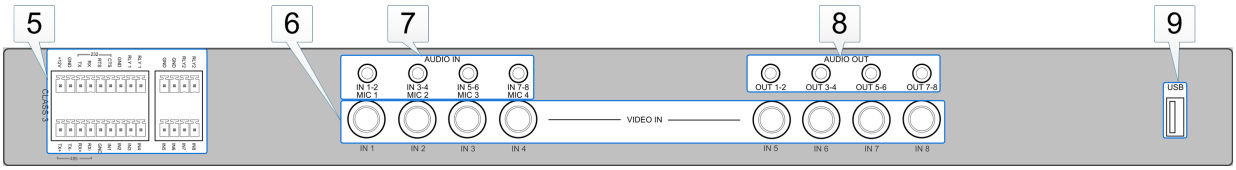
The S1800e series multi-port encoders delivers high-resolution images for both recording and live video viewing. The Nextiva S1808e, S1808e-A, S1816e and S1816e-A video encoders supports H.264 and MPEG-4 video up to D1/30 frames per second on all ports. In addition to the Nextiva S1808e and S1816e powerful video encoders, the S1816e-SP is a cost effective version with performance of up to D1/15fps and comprehensive feature set. By incorporating the H.264 industry-leading video standard - the Nextiva S1800e series offers excellent image clarity - while reducing use of network bandwidth and storage by up to 50 percent.

The Nextiva S1808e-A and S1816e-A video encoders supports bi-directional audio: audio input and output. Audio input allows to send audio signals for listening either live or recorded sounds with synchronized video. Audio output can be used to communicate back to the encoder location by connecting a speaker.

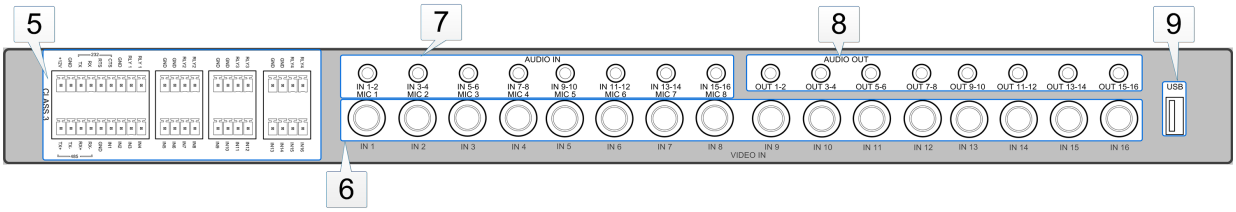
S1808e Front

S1816e and S1816e-SP Front

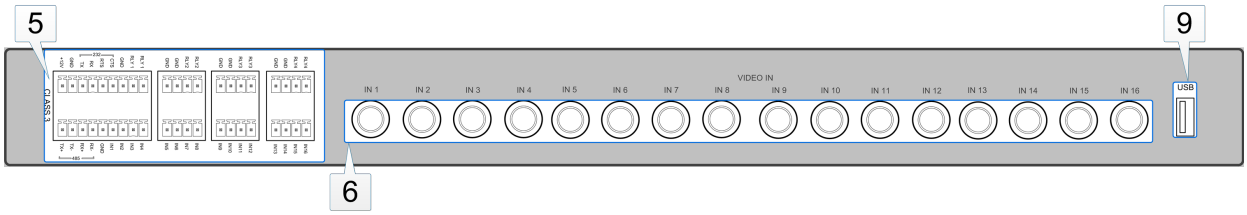
S1816e-SR Front



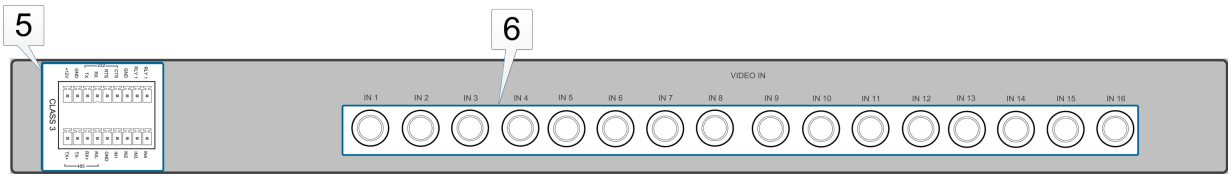
S1808e Rear



S1816e Rear



S1816e-SP Rear

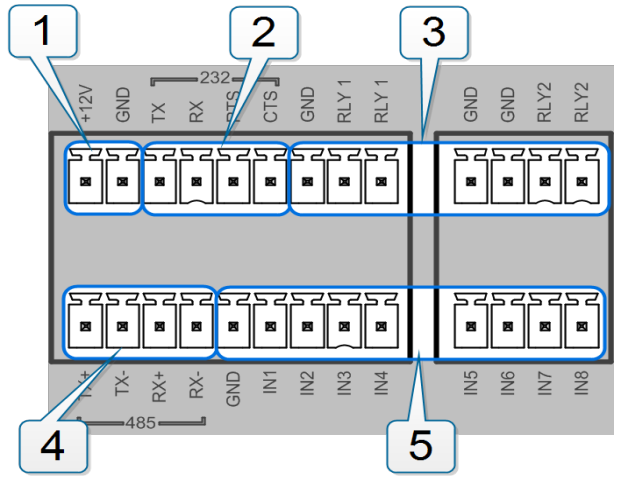


S1816e-SR Rear

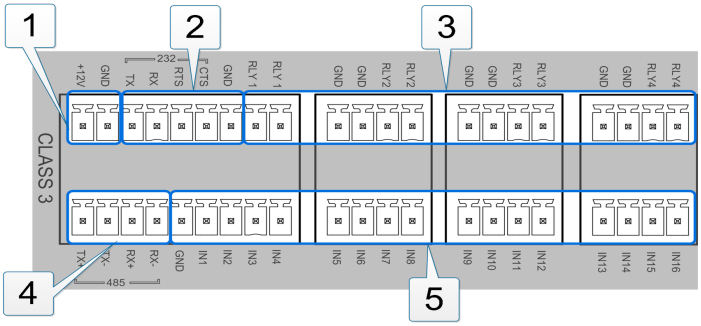
Description

1. Two RJ-45 Network connectors (One RJ-45 Network connector on the S1816e-SR model)
2. Video Status LEDs
   - 8 on the S1808e
   - 16 on the S1816e
3. Reset button
4. System Status LED
5. Terminal block
6. Video input
   - 8 connectors on the S1808e
   - 16 connectors on the S1816e
7. Audio input connectors, each having two audio line-in or one mic in. (No Audio input on the S1816e-SP and S1816e-SR models)
   - Four connectors on the S1808e
   - Eight connectors on the S18016e
8. Audio output, each having two audio line-out (No Audio output on the S1816e-SP and S1816e-SR models)
   - Four connectors on the S1808e
   - Eight connectors on the S1816e
9. One USB port (No USB port on the S1816e-SR model)

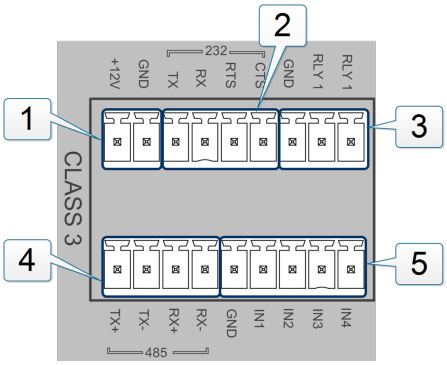
Multi-Port Terminal Block



S1808e Terminal Block



S1816e and S1816e-SP Terminal Block



S1816e-SR Terminal Block

Description

1. One 12V DC input
2. One RS-232

3. Relay output
   - Two on the S1808e
   - Four on the S1816e
   - One on the S1816e-SR
4. RS 422/485
5. Dry contacts
   - 8 on the S1808e
   - 16 on the S1816e
   - 4 on the S1816e-SR

Product Dimension and Weight

The S1808e, S1808e-A, S1816e, S1816e-A, S1816e-SP and S1816e-SR have the following dimensions:

- 17L × 6.6W ×1.7H in. (430L × 67.68W × 42.6H mm)
- 4.0 lb. (1.8 kg)

Nextiva Onboard Analytics

Nextiva Onboard Analytics is a licensed feature available on the S1808e, S1808e-A, S1816e and S1816e-A multiport encoders. Nextiva Onboard Analytics supports up to four video inputs (1, 2, 5, and 6 on the S1808e) and (1, 2, 9, and 10 on the S1816e).

NOTE: The S1816e-SP and S1816e-SR do not support Nextiva Onboard Analytics.

The Onboard Analytics Web Console is accessible through the Web Interface and the Analytics Web Console allows you to view video channels, create video analytics rules, configure your device for analytics, and change parameters that control how events are detected.

Security

Every S1800e series device comes with a unique SSL (Secure Sockets Layer) certificate for securing its IP link. SSL is a commonly used protocol for managing the security of IP message transmission. With the SSL protocol, the following data: Web Control Data, and VSIP communication are secured. For more information on activating the SSL security, refer to the SConfigurator User Guide, Web Interface User Guide or your Nextiva Administration Guide.

Frame Rate and Performance for the Single- and Dual-Port Devices

The S1801e and S1802e encoders support H.264 and MJPEG video up to D1/30fps on all streams simultaneously for up to 10Mbps.

The available video frame rates (frames per second) of each encoder are:

- NTSC-1, 2, 3, 3.75, 5, 6, 7.5, 10, 15, or 30 fps
- PAL-1, 2.5, 5, 6.75, 8.33, 12.5, or 25 fps

Encoders 1, 2 and 3 are H.264 and Encoder 4 is MJPEG.

A typical scenario would be using encoder 1 as the recorder, since it is the primary H.264 encoder. Encoder 3 or 4 can be used for viewing or recording, depending if you want to view live video in H.264 or MJPEG.

Supported Resolution

The following table lists the video resolutions supported by the S1801e and S1802e encoders.

Resolution	NTSC	PAL
CIF	352 × 240	352 × 288
2CIF	704 × 240	704 × 288
4CIF	704 × 480	704 × 576
D1	720 × 480	720 × 576

Supported Frame Rates

The following table lists the performance that each video encoder on the S1801e and S1802e encoders can achieve with the H.264 compression mode using single-stream encoding. For other encoding values, refer to the Nextiva Edge Devices Stream Performance document, available on the Verint extranet: https://online.verint.com/.

Resolution	NTSC	PAL
CIF	30 fps	25 fps
2CIF	30 fps	25 fps
4CIF	30 fps	25 fps
D1	30 fps	25 fps

Supported Decoding Resolution and Tile Layout

The following table lists the displayed video resolutions supported by the S1801e-R and S1801e-R-HD decoders. The monitor used must support one of these resolutions.

NOTE: The S1801e-R decoder is available in two models with different connector types (BNC and HDMI). For the HDMI model, HDTV standard is used, which is independent of NTSC/PAL standards.

Resolution	NTSC	PAL	Frames per Second
CIF	352 × 240	352 × 288	30
2CIF	704 × 240	704 × 288	30
4CIF	704 × 480	704 × 576	30
D1	720 × 480	720 × 576	30
640×480p60[a]	640 × 480		60
480p60a	720 × 480		60
576p50a	720 × 576		50
HD720p50/60a	1280 × 720		50/60[b]
HD1080i50/60a	1920 × 1080		50/60b

Supported Tile Layout

The following table lists the supported video decoding resolution on each tile by each mode on the S1801e-R and S1801e-R-HD.

	Tiles					
	1	2	3	4	5	6
Single	CIF 2CIF 4CIF D1 <= 2 Megapixel[c]	None	None	None	None	None
Quad	CIF 2CIF	CIF 2CIF	CIF 2CIF	CIF 2CIF	None	None

[a] Applies only to the HDMI decoder.

[b] Field per second

[c] Only Supported on the HDMI Decoder.

	Tiles					
	1	2	3	4	5	6
	4CIF D1 <= 1 Megapixela	4CIF D1	4CIF D1	4CIF D1		
3 x 2a	CIF 2CIF 4CIF D1 <= 1 Megapixela	CIF 2CIF 4CIF D1	CIF 2CIF 4CIF D1	CIF 2CIF 4CIF D1	CIF 2CIF 4CIF D1	CIF 2CIF 4CIF D1

Multiport Supported Resolutions

The S1808e, S1808e-A, S1816e and S1816e-A encoders support H.264 and MPEG-4 video up to 4CIF/30 frames per second on all ports. The S1816e-SP and S1816e-SR are a cost effective encoders and supports H.264 video up to 4CIF/15 frames per second on all ports and can be configured in dual or triple stream modes.

The available video frame rates (frames per second) of each encoder are:

- NTSC-1, 2, 3, 3.75, 5, 6, 7.5, 10, 15, or 30 fps
- PAL-1, 2.5, 5, 6.75, 8.33, 12.5, or 25 fps

Encoders 1 and 2 are H.264 and Encoder 3 is MPEG4. You can customize each encoder to meet the system requirements in terms of frame rate and resolution.

A typical scenario would be using encoder 1 as the recorder, since it is the primary H.264 encoder. Encoder 2 or 3 can be used for viewing or recording, depending if you want to view live video in H.264 or MPEG4.

The following table lists the video resolutions supported by the S1800e series multi-port encoders.

Resolution	NTSC	PAL
CIF	352 × 240	352 × 288
2CIF	704 × 240	704 × 288
4CIF	704 × 480	704 × 576
D1	720 × 480	720 × 576

Multiport Supported Frame Rates

The following table lists the performance that each video encoder on the S1800e series encoders can achieve with the H.264 compression mode using single-stream encoding. For other encoding values, refer to the Nextiva Edge Devices Stream Performance document, available on the Verint extranet: https://online.verint.com/.

Resolution	NTSC			PAL		
	S1808e and S1816e[a]	S1816e-SP and S1816e-SR		S1808e and S1816e	S1816e-SP and S1816e-SR	
		Single H.264	Dual H.264		Single H.264	Dual H.264
CIF	30 fps	30 fps	30 fps	25 fps	25 fps	25 fps
2CIF	30 fps	30 fps	30 fps	25 fps	25 fps	25 fps
4CIF	30 fps	15 fps	N/A	25 fps	12.5 fps	N/A
D1	30 fps	15 fps	N/A	25 fps	12.5 fps	N/A

Supported Audio Formats

The S1801e, S1802e, S1808e-A, S1816e-A, S1801e-R and S1801e-R-HD supports bi-directional audio: audio input and output. Audio input allows you to capture audio signals from a camera, provided that it supports audio, at the same time it captures video.

Currently, the S1800e series devices support the following audio formats:

Codec	Sampling Frequency	Bits per Sample	Bitrate
PCM (no compression)	8 kHz	16 bits/data	28 kbits/sec (8kHz)
G.711/μ-Law (8 bits)	8 kHz	14 bits signed/data	64 kbits/sec

NOTE: The S1816e-SR and S1816e-SR do not support audio.

Understanding the LED Indicators

The S1800e series devices have two types of tri-colored (red-orange-green) LEDs: One system status LED and either 1, 8 or 16 video status LEDs depending on the model.

System Status LED

The system status LED provides a visual indication on the current state of the device.

LED Pattern	Description
Steady red for 0.5 sec and steady orange for 15 sec.	The encoder is powering up, phase 1 (bootloader section).
Steady green	The encoder is powering up, phase 2 (operating system is starting up).
Flashing red (1 sec. intervals)	The IP address is assigned to another device on the network. The encoder is now using APIPA addressing format.
Flashing green (1 sec. intervals)	The firmware has started, the encoder is connected to the network, but no serial data is transmitted.
Flashing green (0.2 sec. intervals)	The firmware has started, the encoder is connected to the network, and serial data is transmitted.
Flashing green (3 sec. intervals)	The firmware has started, but the encoder is not connected to the network.
Flashing green-red (1 sec. intervals)	The encoder is undergoing a firmware update.
Flashing red (0.1 sec. intervals)	The encoder is being identified.
Flashing orange (1 sec intervals)	The encoder failed to boot normally and entered recovery mode. The firmware needs to be updated through SConfigurator or the Web Interface. The encoder is using the static IP address assigned by the user.
Flashing orange (3 blinks at 1 sec intervals) and 2 quick red pulses (0.5 sec interval)	The encoder failed to boot normally and entered recovery mode. The firmware needs to be updated through SConfigurator or the Web Interface. The encoder is using the APIPA addressing format.
Flashing red-orange (1 sec intervals)	There is an internal error that is preventing the encoder from starting normally. Shut down the encoder, wait 30 seconds, then start it again. If the condition persists, call Verint Video Solutions support.
LED not lit	Check the power supply and cabling. If power is available and the LED stays off, call Verint Video Solutions support.

Video Status LEDs

The video status LEDs provides a visual indication on the current state of the video connection between the encoder and each analog video source.

LED Pattern	Description
Steady green	An analog video source is connected to the corresponding input but video is not transmitted.
Flashing green (0.2 sec. interval)	An analog video source is connected to the corresponding input and encoded video is transmitted.
Steady Red	No analog video source is detected on the corresponding input and encoded video is not transmitted.
Flashing red (0.2 sec. intervals)	No analog video source is detected on the corresponding input but encoded video (red/blue frame) is transmitted.
Flashing green-red (1 sec. intervals)	The encoder is undergoing a firmware update.
For multiport encoders: Steady orange **For single/dual port encoders:** Flashing green (3 times) and orange (1 time)	Video cable is connected, but the video standard is incorrect and no video is streaming from the input.
Flashing orange	Video cable is connected and video is streaming from the input, but the video standard is incorrect.

RTSP Support

Real Time Streaming Protocol (RTSP) is an application-level protocol for the transfer of real-time video data. The S1800e series support the RTSP protocol to stream H.264 and MPEG4 video to third party media players like VLC or Apple QuickTime.

NOTE: The S1800e series does not support the streaming of audio.

The URL to view video from S1800e series is: *rtsp://<unit_ip_address>/media/<channel>/video/<index>*

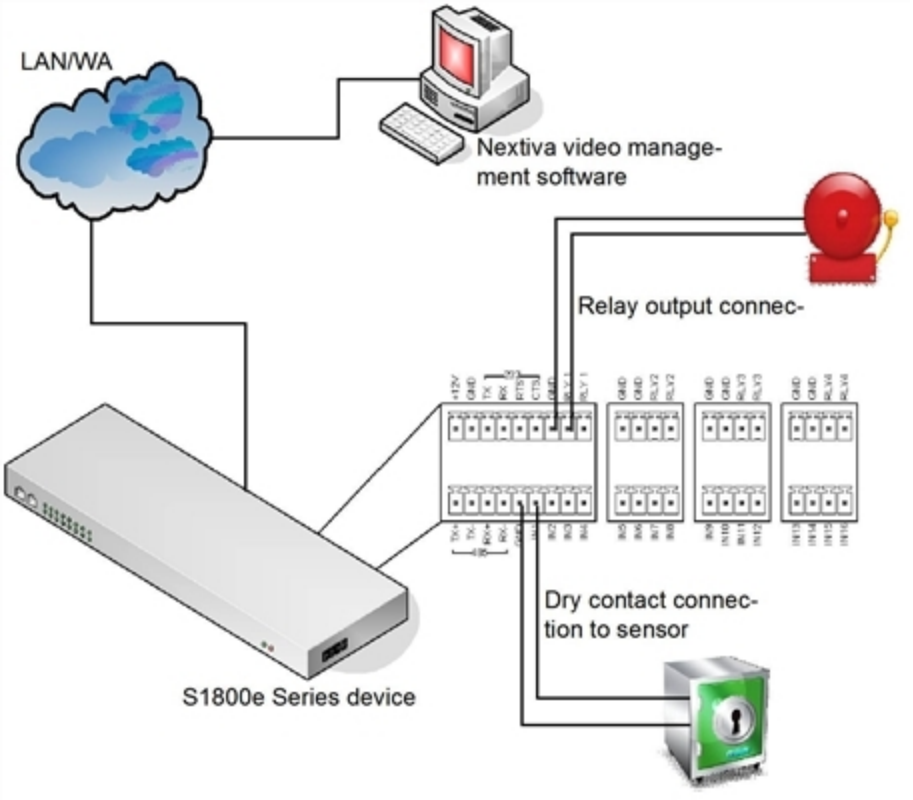
Where:

- *<unit_ip_address>* is the IP address of the S1800e
- *<channel>* is the input number (1 to 8 for S1808e, 1 to 16 for S1816e and 1 for S1801e)
- *<index>* is the encoder number (1-3 for the S1808e and S1816e (encoders 1 and 2 will stream in H.264 and encoder 3 will stream in MPEG4), 1 to 4 for the S1801e (encoders 1 to 3 will stream in H.264 and encoder 4 will stream in MPEG4).

NOTE: RTSP is not available when the global security profile is enabled.

Configuring the Input/Output Terminals

The rear panel of the S1800e series devices has 1, 2, 8 or 16 dry contact inputs and 1, 2 or 4 relay output terminals for triggers and alarms depending on the model. Using a video management software such as Nextiva Video Management Software, you can create scenarios with Nextiva VMS Event Manager to generate a response through the relay outputs to pre-defined system and motion events detected in Nextiva from sensors connected to the dry contact inputs. For complete information on using the Nextiva VMS Event Manager, refer to the current Nextiva VMS Administration Guide.



Chapter 2

Installing the Single-and Dual-Port Devices

This chapter describes the installation and configuration steps you need to perform to prepare the S1800e series devices for operation.

CAUTION: The S1800e series devices are enclosed in a non-weatherproof steel casing and should be placed in an indoor environment.

The following topics are discussed:

Package Contents 30
Installing on a Flat Surface 30
Installing in a Rack 30
Powering the Devices 32
Powering the S1801e-POE 33
Connecting Analog Cameras 34
Connecting Network Cables 34
Connecting a Serial Device 35
Connecting Audio Inputs 39
Connecting Audio Output 39

Package Contents

Each installation kit contains the following:

- One S1801e, S1801e-PoE, S1802e, S1801e-R or S1801e-R-HD device
- One set of rack-mount brackets with four screws (Philips M3 x 6mm pan head)
- One Nextiva S1800e series Quick Installation Guide
- PS12: Efficiency level V compliant power supply

Optional Accessories

You can order the following power supplies when purchasing the encoder or decoder:

- VRM8: 19-inch rack mount panel for eight units (single- or dual-ports devices)
- PSPOE: 802.3af compliant Power over Ethernet injector

Installing on a Flat Surface

This section explains how to install the S1800e on a desktop or flat surface.

► Perform the following steps:

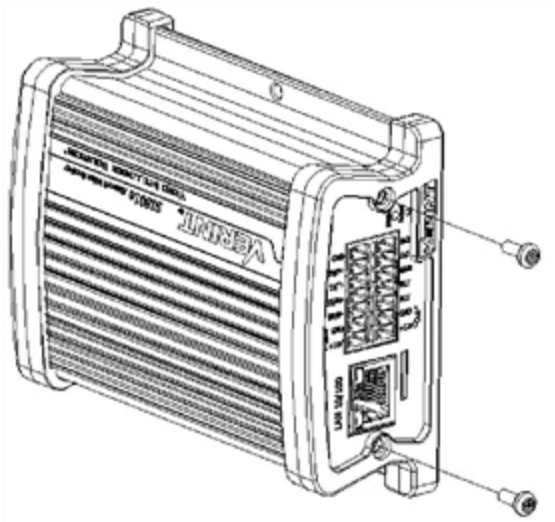
1. Remove any debris and dust from the surface as well as the surrounding area.
2. Place the device on the flat surface.
3. Ensure that you have access to both the front and rear of the device and that the fan airflow is not blocked.

Installing in a Rack

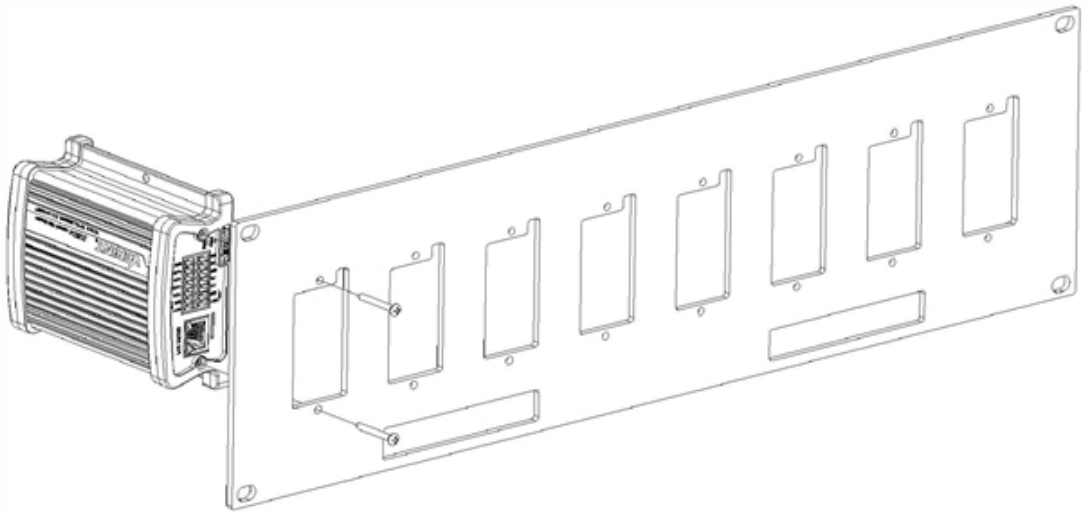
This section explains how to install the device in a rack.

► Perform the following steps:

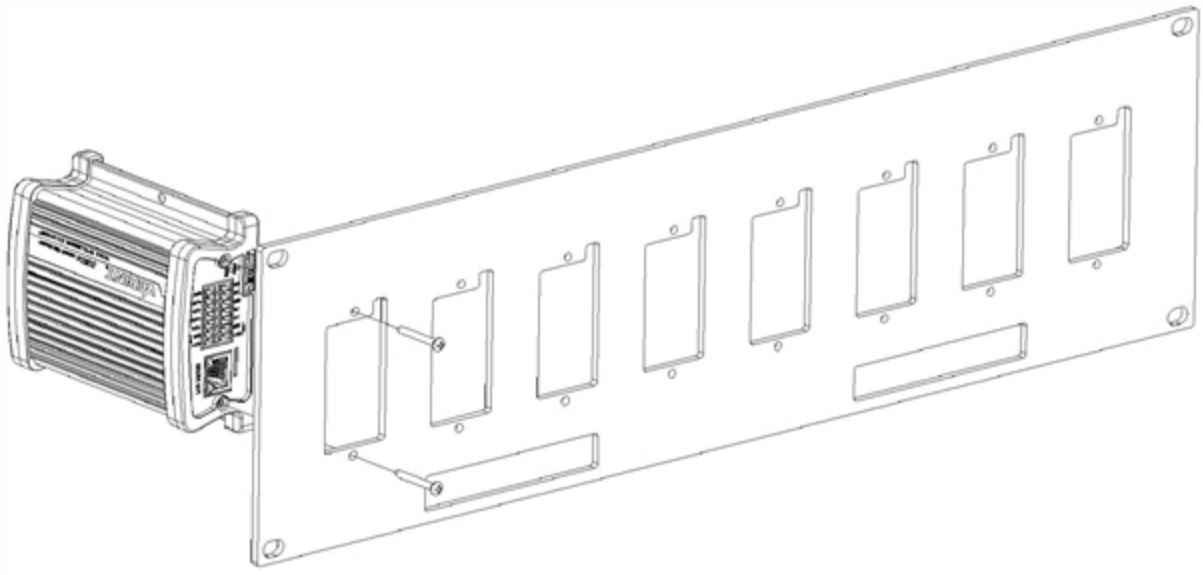
1. Remove the two screws from the S1800e series device.



2. Screw the S1800e series device to the rackmount plate using 5 in-lb (0.56 N-m) force with the provided screws.



3. Slide the device into the 3U mounting space in the rack cabinet.
4. Secure the device to the rack cabinet using the screws supplied with the rack.

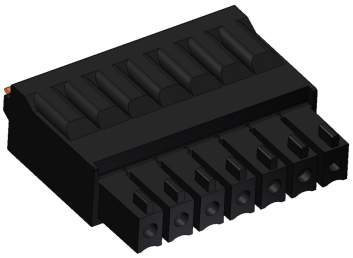


Powering the Devices

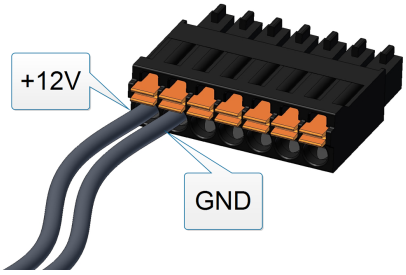
The S1801e and S1802e encoders consumes up to 5W of power, while the S1801e-R and S1801e-R-HDMI consumes up to 4W of power.

► Perform the following steps:

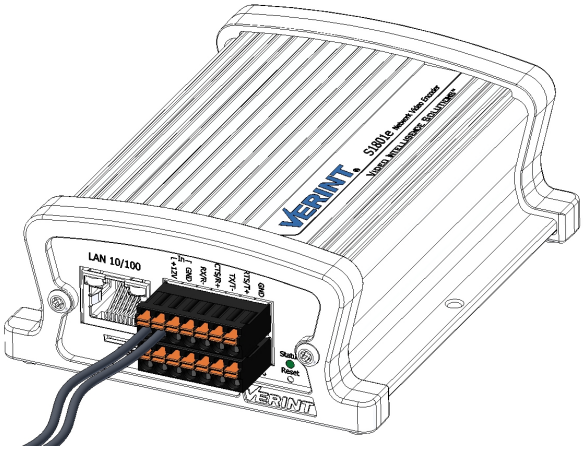
1. Remove the terminal block plug from the rear of the device.



2. Verify the polarity of each wire from the power supply according to the attached label.
3. Connect the positive power wire in the corresponding +12V pole and the negative power wire in the corresponding GND pole on the terminal block plug.



4. Connect the terminal block plug to the on the rear of the device.



5. Connect the power supply to an outlet or UPS.
6. If required, connect the serial ports of the S1800e device to a PTZ camera.

Powering the S1801e-POE

The S1801e and S1802e encoders consumes up to 5W of power, while the S1801e-R and S1801e-R-HDMI consumes up to 4W of power.

► Perform the following steps:

1. Plug a straight-through Ethernet cable into the LAN 10/100 (RJ-45) connector on the back of the S1801e-POE encoder.

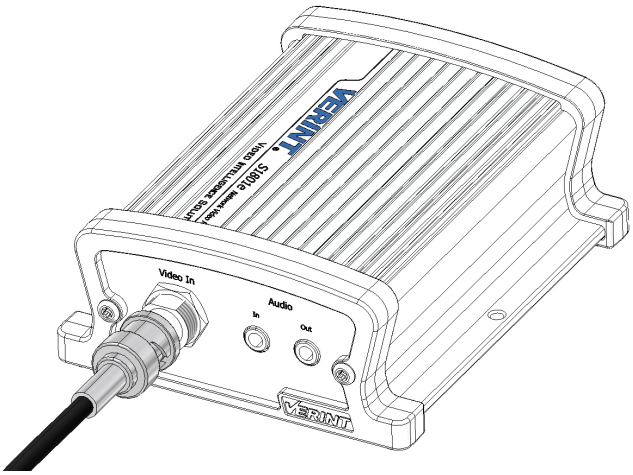
2. Plug the other end of the cable into a POE Ethernet switch or to the Data&PWR port of a POE injector. If you use a PoE injector, make sure the Data port of the injector is properly connected to the Ethernet switch.

Connecting Analog Cameras

The following procedure describes how to connect analog cameras directly to the device.

► Perform the following steps:

1. Connect the video cables from the analog cameras to the BNC connectors on the rear of the device.



Connecting Network Cables

Use the following procedure to connect the network cable to the device.

► Perform the following steps:

1. Plug a straight-through ethernet cable to the LAN 10/100 connector on the rear.

Connecting a Serial Device

RS-232, RS-422 and RS-485 are communication standards between a Data Terminal Equipment (DTE) and a Data Circuit-terminating Equipment (DCE) using the asynchronous serial communication method.

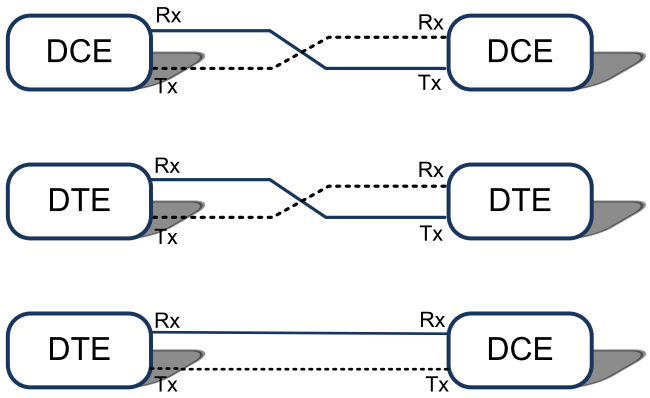
Most serial equipments such as PTZ cameras, keyboards, matrixs, multiplexers, or access cards conform to the RS-232 or RS-422/485 standards. The S1800e series devices supports the RS-232, RS-422, and RS-485 asynchronous protocols using pluggable screw-terminal strips. For any other protocol, you may need a converter.

NOTE: The S1800e series devices come with a terminal block plug to attach RS-232, RS-422/485 devices to the S1800e series.

Connecting RS-232 Devices

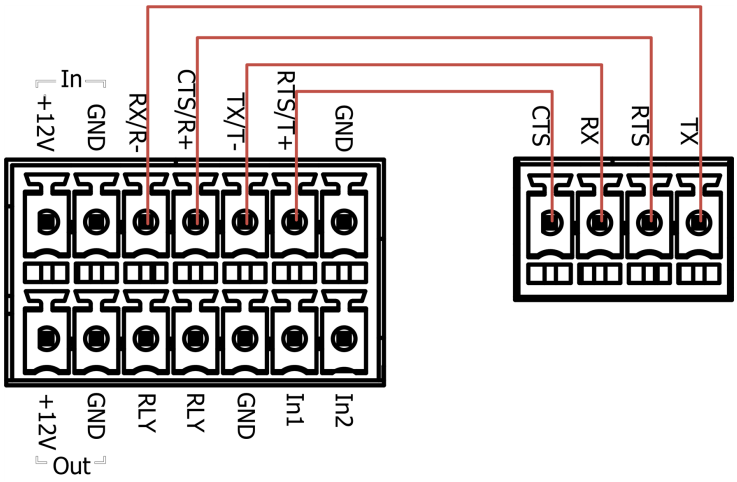
The RS-232 standard is used in some analog cameras and computer serial ports. Before connecting the S1800e series device to a RS-232 serial equipment, you need to determine if they are data terminal equipment (DTE) or data communication equipment (DCE).

When connecting two modules of the same type, you have to cross the data wires to create a communication. On the other hand, when connecting a DTE with a DCE, a straight cable is required.



► Perform the following steps:

1. Remove the terminal block plug from the rear of the device.
2. Connect a twisted pair cable to the terminal block plug as shown below.



3. Connect the terminal block plug to the rear of the device.

Connecting RS-422/485 Four-Wires

Most target devices (keyboards, PTZ cameras, monitors) use the RS-422/485 protocol for communication.

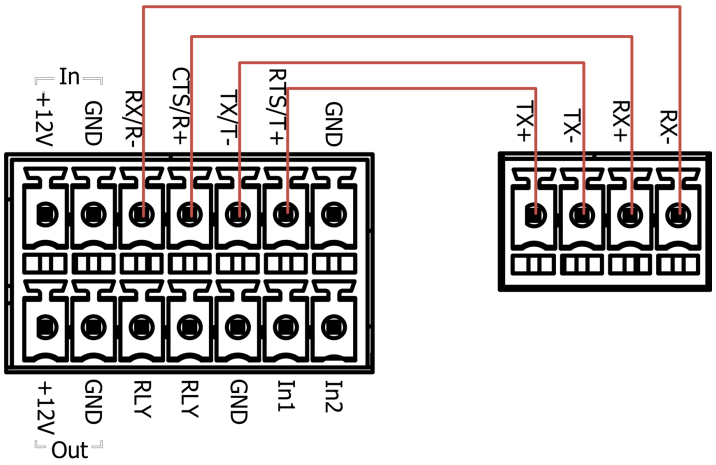
Using a twisted pair cable, connect the signals as shown in the table below.

Signal on Peripheral	Signal on S1800e
Tx+	Tx+
Tx-	Tx-
Rx+	Rx+
Rx-	Rx-
ground	ground

NOTE: On some equipment, signal terminology may vary. Refer to the peripheral documentation to find the equivalent terms.

► Perform the following steps:

1. Remove the terminal block plug from the rear of the device.
2. Connect a twisted pair cable to the terminal block plug as shown below.



3. Connect the terminal block plug to the rear of the device.

Connecting RS-485 Devices

In order to connect an RS-485 device to the S1800e, you will need to create a Data+ and a Data- signal from the existing Tx and Rx signals.

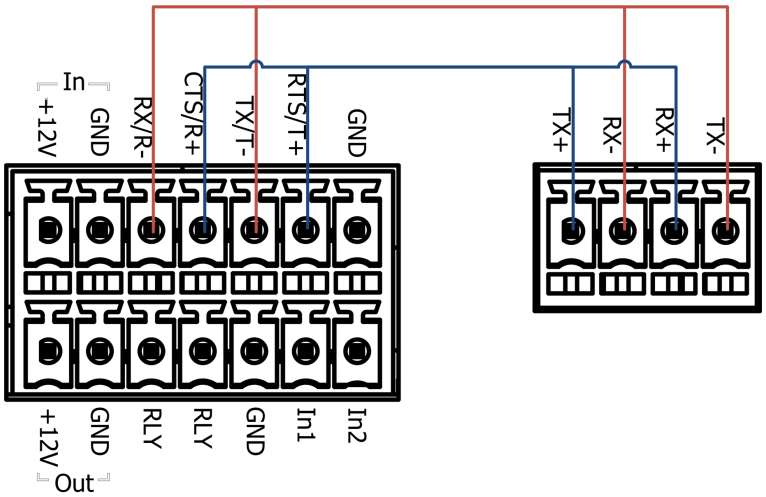
Use the following table to help you make the proper connection to a two-wire RS-485 serial device, where the Tx signals are for input and the Rx signals are for output.

NOTE: On some equipment, signal terminology may vary. Refer to the peripheral documentation to find the equivalent terms.

Signal on Peripheral	Signal on EdgeVR
Data+	Data+
Data-	Data-
ground	ground

► Perform the following steps:

1. Remove the terminal block plug from the rear of the device.
2. Create the Data- signal by wiring the Tx- and Rx- pins together on the terminal block plug.
3. Connect a twisted pair cable to the terminal block plug.



4. Connect the terminal block plug to the rear of the device.

Connecting Audio Inputs

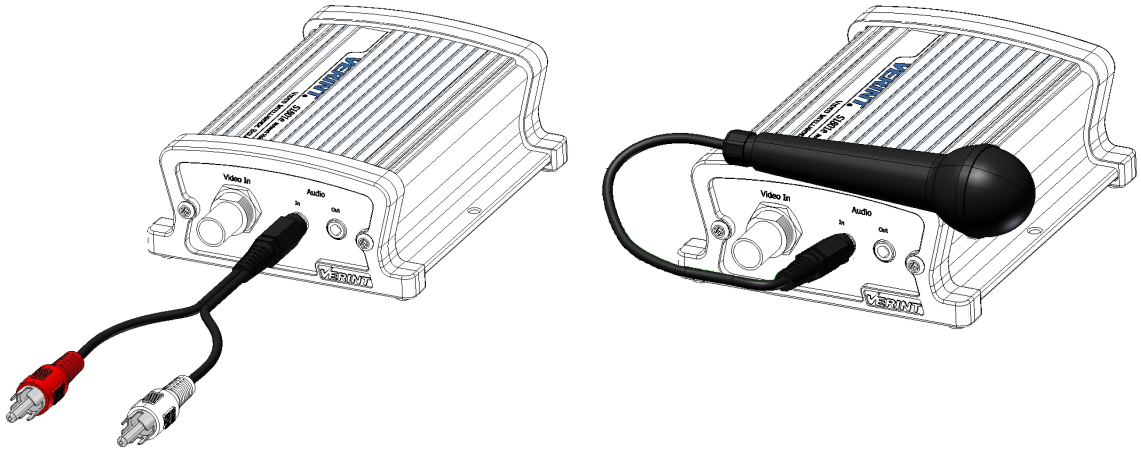
The S1801e and S1802e supports bi-directional audio: audio input and output. Audio input allows you to capture audio signals from a camera, provided that it supports audio, at the same time it captures video.

Currently, the S1800e series devices support the following audio formats:

Codec	Sampling Frequency	Bits per Sample	Bitrate
PCM (no compression)	8 kHz	16bits/data	28 kbits/sec (8kHz)
G.711/μ-Law (8 bits)	8 kHz	14 bits signed/data	64 kbits/sec

► Perform the following steps:

1. Insert a microphone, single cable or Y connector into the Audio In connector on the rear.
2. Plug the audio cable from the audio source to the Y connector.

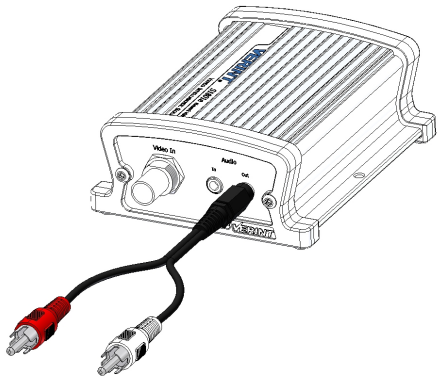


Connecting Audio Output

The S1801e and S1802e can be configured to communicate requests, instructions, or other information to a site.

► Perform the following steps:

1. Insert the cable of the speaker into Audio Out audio output connector on the rear.



2. Connect the other end of the connector to an external speaker.

Chapter 3

Installing the S1800e Series Multiport Devices

This chapter describes the installation and configuration steps you need to perform to prepare the S1800e series devices for operation.

CAUTION: The S1800e series devices are enclosed in a non-weatherproof steel casing and should be placed in an indoor environment.

The following topics are discussed:

Package Contents 42
Installing on a Flat Surface 42
Installing in a Rack 42
Powering the Multiport Devices 43
Connecting Analog Cameras 44
Connecting Network Cables 45
Connecting a Serial Device 45
Connecting Audio Inputs 50
Connecting Audio Output 50

Package Contents

Each installation kit contains the following:

- One S1808e, S1808e-A, S1816e, S1816e-A, S1816e-SP or S1816e-SR device
- One set of rack-mount brackets with four screws (Philips M3 × 6mm pan head)
- One Nextiva S1800e series Quick Installation Guide

Optional Accessories

You can order the following power supplies when purchasing the multiport encoders:

- PS1261: Efficiency level V compliant power supply for S1800e series multiport devices.
- PS1281: 19-inch rack mountable power supply for up to ten multiport devices.
- PS1282-10: 19-inch rack mountable power supply for up to 10 - S1800e series multiport devices.
- PS1282-20: 19-inch rack mountable power supply for up to 20 - S1800e series multiport devices.
- PDP10-2: 19-inch 1U power distribution panel rack mount to connect up to ten S1800e series devices

Installing on a Flat Surface

This section explains how to install the S1800e on a desktop or flat surface.

► Perform the following steps:

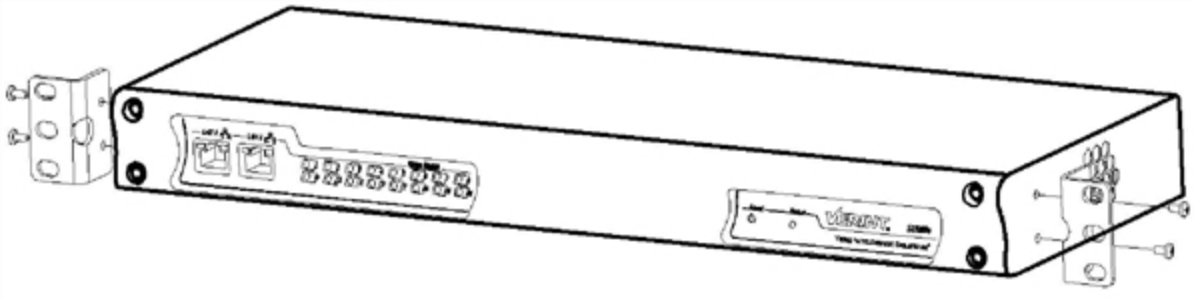
1. Remove any debris and dust from the surface as well as the surrounding area.
2. Place the device on the flat surface.
3. Ensure that you have access to both the front and rear of the device and that the fan airflow is not blocked.

Installing in a Rack

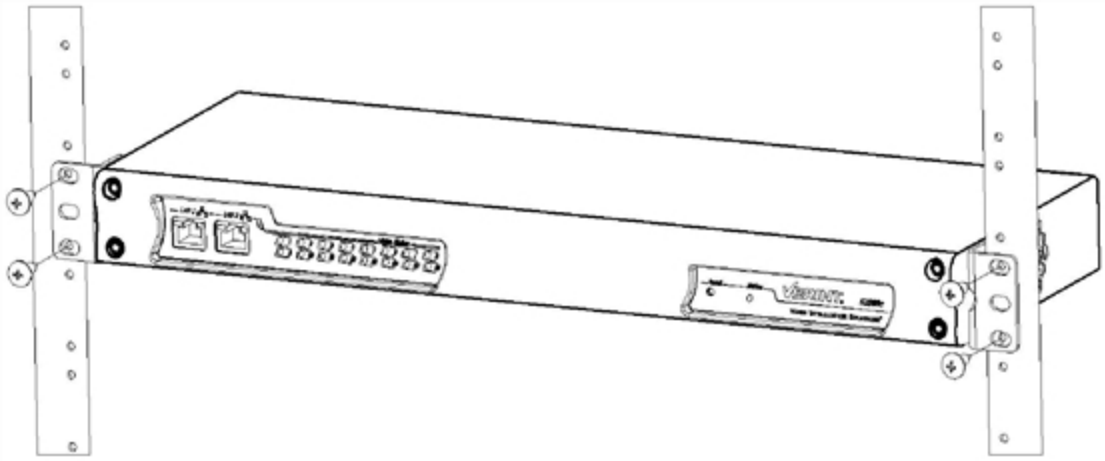
This section explains how to install the device in a rack.

► Perform the following steps:

1. Align the mounting brackets with the holes on the side of the S1800e series device.



2. Screw the rack-mount brackets to the device using 5 in-lb (0.56 N-m) force with the provided screws.
3. Slide the device into the 1U mounting space in the rack cabinet and ensure that the fan airflow is not blocked.
4. Secure the device to the rack cabinet using the screws supplied with the rack.

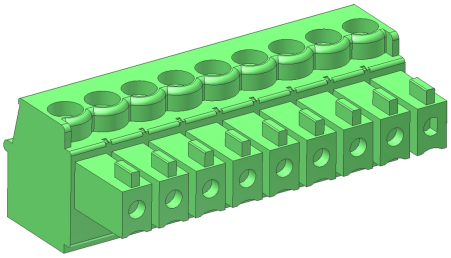


Powering the Multiport Devices

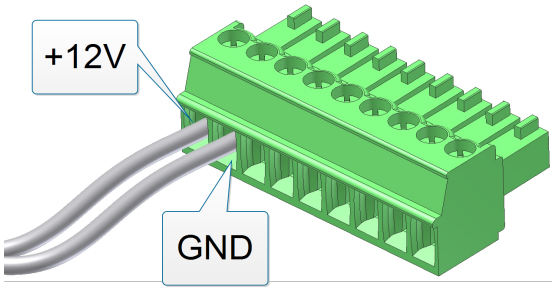
You can use the PS1261 or any other certified power supply to connect to the S1800e series devices. If you plan on using a power supply other than the PS1261, ensure that it is certified with an output voltage rating of 12V DC and an output current rating of 1.8A up to 3A. The power wire gauge should be in the wire range of 28-16 AWG in order to properly engage the terminal block plug.

► Perform the following steps:

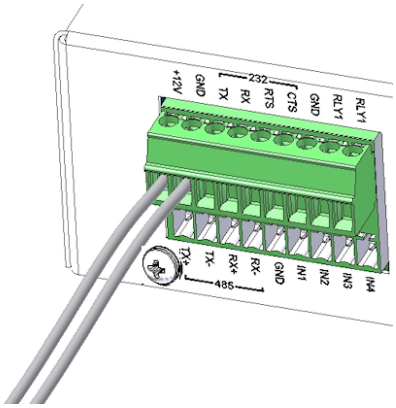
1. Remove the terminal block plug from the rear of the device.



2. Verify the polarity of each wire from the power supply according to the attached label.
3. Connect the positive power wire in the corresponding +12V pole and the negative power wire in the corresponding GND pole on the terminal block plug and screw them into place using 1.7 in-lb (0.19 N-m) force.



4. Connect the terminal block plug to the on the rear of the device.



5. Connect the power supply to an outlet or UPS.
6. If required, connect the serial ports of the S1800e device to a PTZ camera.

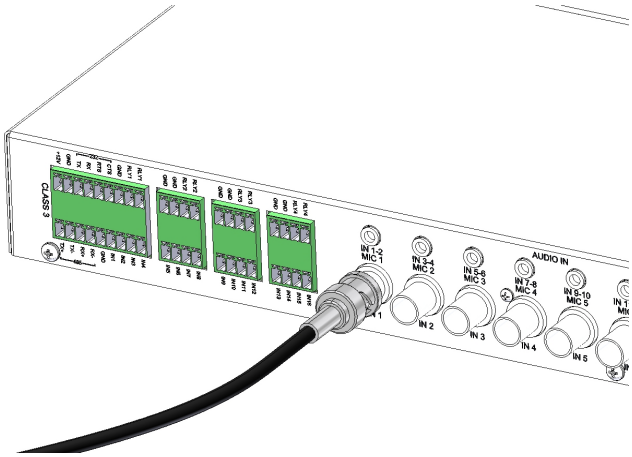
NOTE: If you are using the PS1281 or the PS1282 power supply with a PDP10-2 power distribution panel, refer to the PDP10-2 Installation Guide that is shipped with the PDP10-2 to set up the power distribution panel.

Connecting Analog Cameras

The following procedure describes how to connect analog cameras directly to the device.

► **Perform the following steps:**

1. Connect the video cables from the analog cameras to the BNC connectors on the rear of the device.



Connecting Network Cables

The primary network interface (LAN-1) on the S1800e series is for the main connectivity to the LAN.

The secondary network interface (LAN-2) on the S1800e series encoder is used by support for debugging purposes. The default IP address of LAN 2 is set to 172.29.204.254 with subnet mask 255.255.255.252. Any computer connecting to the S1800e series encoder must use the following IP address 172.29.204.253.

NOTE: LAN-2 is not available on the S1816e-SR model.

Connection	Purpose
LAN-1	Primary LAN/WAN connectivity.
LAN-2	Secondary LAN connectivity used by Verint support.

► **Perform the following steps:**

1. Plug a straight-through Ethernet cable to the LAN 1 connector on the rear.

Connecting a Serial Device

RS-232, RS-422 and RS-485 are communication standards between a Data Terminal Equipment (DTE) and a Data Circuit-terminating Equipment (DCE) using the asynchronous serial communication method.

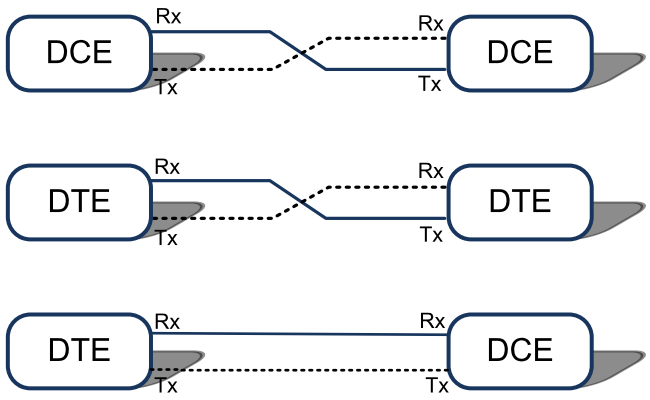
Most serial equipments such as PTZ cameras, keyboards, matrixs, multiplexers, or access cards conform to the RS-232 or RS-422/485 standards. The S1800e series devices supports the RS-232, RS-422, and RS-485 asynchronous protocols using pluggable screw-terminal strips. For any other protocol, you may need a converter.

NOTE: The S1800e series devices come with a terminal block plug to attach RS-232, RS-422/485 devices to the S1800e series.

Connecting RS-232 Devices

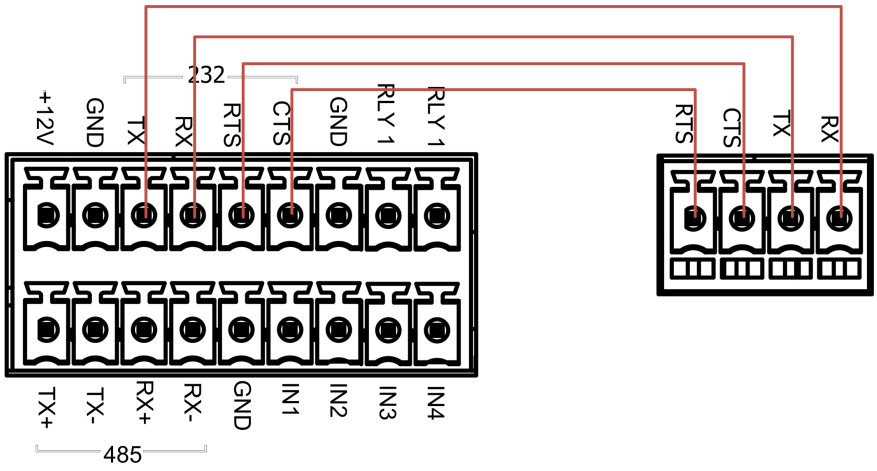
The RS-232 standard is used in some analog cameras and computer serial ports. Before connecting the S1800e series device to a RS-232 serial equipment, you need to determine if they are data terminal equipment (DTE) or data communication equipment (DCE).

When connecting two modules of the same type, you have to cross the data wires to create a communication. On the other hand, when connecting a DTE with a DCE, a straight cable is required.



► Perform the following steps:

1. Remove the terminal block plug from the rear of the device.
2. Connect a twisted pair cable to the terminal block plug as shown below.



3. Connect the terminal block plug to the rear of the device.

Connecting RS-422/485 Four-Wires

Most target devices (keyboards, PTZ cameras, monitors) use the RS-422/485 protocol for communication.

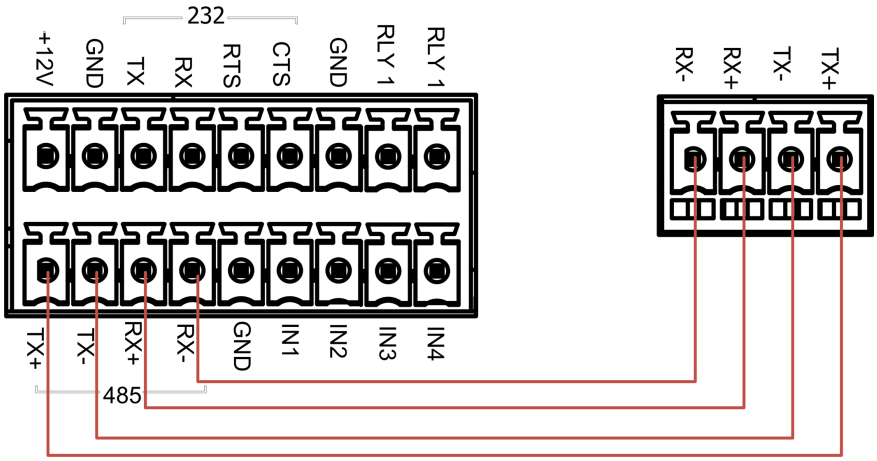
Using a twisted pair cable, connect the signals as shown in the table below.

Signal on Peripheral	Signal on S1800e
Tx+	Tx+
Tx-	Tx-
Rx+	Rx+
Rx-	Rx-
ground	ground

NOTE: On some equipment, signal terminology may vary. Refer to the peripheral documentation to find the equivalent terms.

► Perform the following steps:

1. Remove the terminal block plug from the rear of the device.
2. Connect a twisted pair cable to the terminal block plug as shown below.



3. Connect the terminal block plug to the rear of the device.

Connecting RS-485 Devices

In order to connect an RS-485 device to the S1800e, you will need to create a Data+ and a Data- signal from the existing Tx and Rx signals.

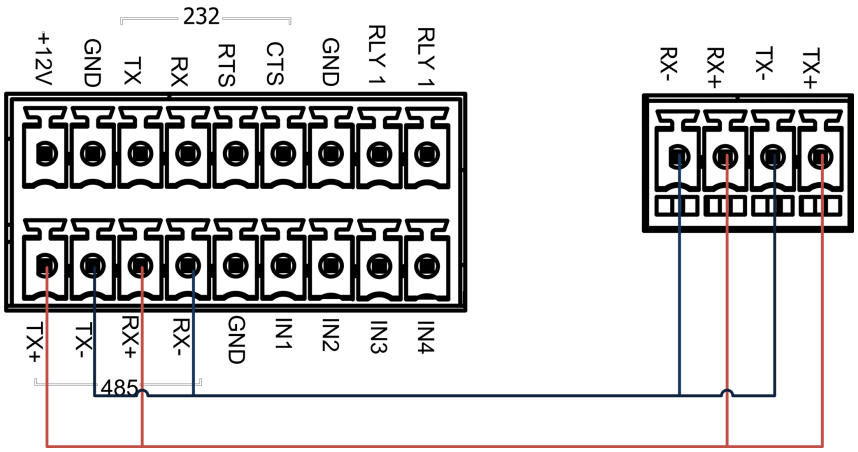
Use the following table to help you make the proper connection to a two-wire RS-485 serial device, where the Tx signals are for input and the Rx signals are for output.

NOTE: On some equipment, signal terminology may vary. Refer to the peripheral documentation to find the equivalent terms.

Signal on Peripheral	Signal on EdgeVR
Data+	Data+
Data-	Data-
ground	ground

► Perform the following steps:

1. Remove the terminal block plug from the rear of the device.
2. Create the Data- signal by wiring the Tx- and Rx- pins together on the terminal block plug.
3. Connect a twisted pair cable to the terminal block plug.



4. Connect the terminal block plug to the rear of the device.

Connecting Audio Inputs

This section explains how to connect audio devices to the S1800e multiport encoders. The audio-in connectors support two audio-mono line-in or one microphone. For the line-in, you can use a RCA mono 3.5 mm stereo adapter.

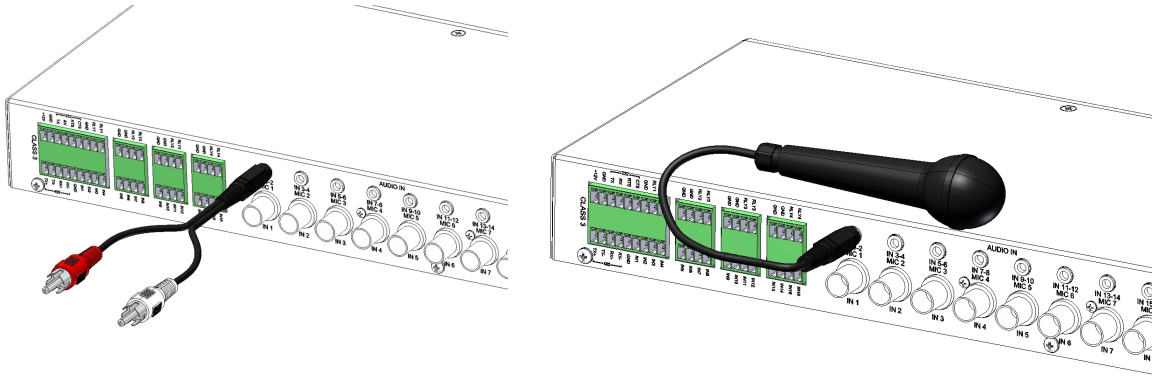
The S1800e multiport encoders support the following audio formats:

Codec	Sampling Frequency	Bits per Sample	Bitrate
PCM (no compression)	8 kHz	16bits/data	28 kbits/sec (8kHz)
G.711/μ-Law (8 bits)	8 kHz	14 bits signed/data	64 kbits/sec

NOTE: The S1816e-SP and S1816e-SR models do not support audio in.

► Perform the following steps:

1. Insert a microphone, single cable or Y connector into the Audio In connector on the rear.
2. Plug the audio cable from the audio source to the Y connector.



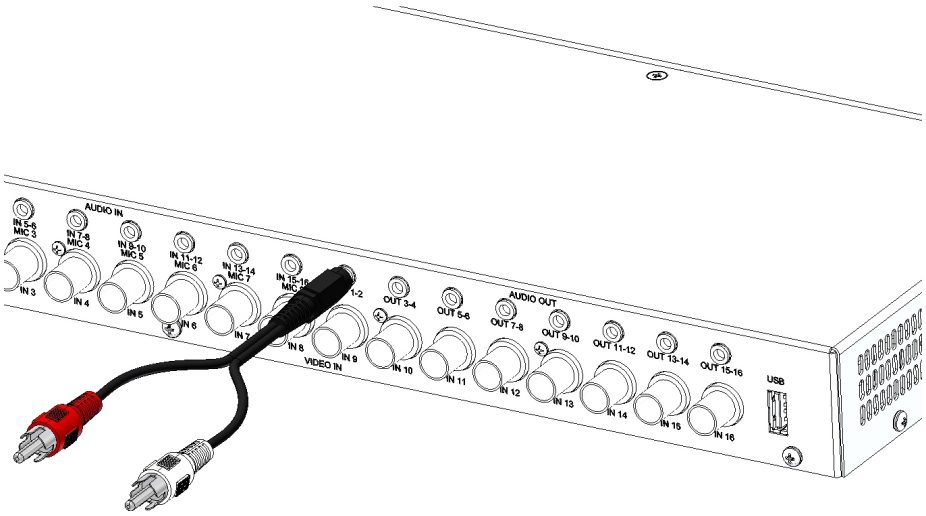
Connecting Audio Output

The S1800e multiport encoders an be configured to communicate requests, instructions, or other information to a site.

NOTE: The S1816e-SP and S1816e-SR models do not support audio out.

► Perform the following steps:

1. Insert the cable of the speaker into Audio Out audio output connector on the rear.


AUDIO IN
IN 5-6 MIC 3
IN 7-8 MIC 4
IN 9-10 MIC 5
IN 11-12 MIC 6
IN 13-14 MIC 7
IN 15-16 MIC 8
IN 3
IN 4
IN 5
IN 6
IN 7
IN 8
VIDEO IN
IN 9
IN 10
IN 11
IN 12
IN 13
IN 14
IN 15
IN 16
1-2
OUT 3-4
OUT 5-6
AUDIO OUT
OUT 7-8
OUT 9-10
OUT 11-12
OUT 13-14
OUT 15-16
USB

Chapter 4

Using SConfigurator for Configuration

Once you have connected all the equipment to the device, you can begin configuring the device to ensure that it can communicate with the attached devices and with a video management software over the network. In order to configure the device, you first need to obtain the IP address using SConfigurator.

SConfigurator is a PC-based administration tool that you can use over any TCP/IP network.

CAUTION: Any changes made using the video management software will override the changes made using SConfigurator or the Web Interface.

The following topics are discussed:

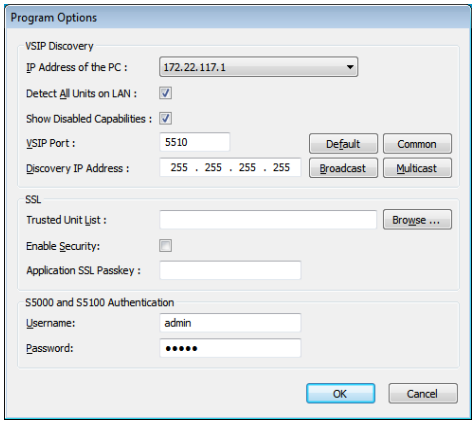
Setting SConfigurator 53
Discovering Devices 54
IP Address Configuration 55
Configuring the Serial Ports 57
Setting the H.264 Encoding Mode for the S1816e-SP or S1816e-SR 61
Setting the Video Standard 62
Video Profile 63
Configuring the Device Video Properties 64
Configuring the Input Properties 65
Setting the SNMP Properties 66
Audio Properties 68

Setting SConfigurator

Before you can use SConfigurator to discover devices on the network, you need to set the initial parameters.

► Perform the following steps:

1. Download the latest version of SConfigurator from:www.verint.com/manuals.
2. Extract the executable file (*SConfigurator.exe*) to the desktop.
3. Double-click *SConfigurator.exe* to start SConfigurator.
4. In the **General** tab, click **Program Options**.



5. Select the IP address of the correct LAN interface from **IP Address of the PC** list.

   SConfigurator automatically detects the IP address unless you are using two Ethernet cards or are using virtual private network (VPN).

6. Select **Detect All Units on LAN**.

   SConfigurator will discover all devices connected to the same LAN as the PC and having the same VSIP port as SConfigurator will be discovered, even those whose IP addresses are not part of the same subnet as the computer. This parameter works only with the broadcast detection method. SConfigurator automatically switches to broadcast, even if the **Discovery IP Address** box displays the multicast address.

7. Ensure that the VSIP Port is 5510; otherwise, click **Default**. This port number must be the same in SConfigurator and in the devices to be configured. The default VSIP port is 5510.

   NOTE: VSIP ports 9541, 65500, and those under 1024 are reserved and should never be used, not even for serial port, video, or audio communication. The maximum value is 65535.

8. Ensure that the **Discovery IP Address** is 255.255.255.255; otherwise, click **Broadcast**. The communication method and associated IP address SConfigurator will use to detect Nextiva devices on the network. Contact your system administrator to know which method your network supports. Possible methods are:

- Broadcast: Sending a message to all devices physically connected to the same network as SConfigurator; it may not reach devices on other LANs. The broadcast IP address is 255.255.255.255. (Default).
- Multicast: Sending a message to a selected group of devices. With the multicast method, SConfigurator can discover devices located across multiple networks, but not through the Internet. The current multicast IP address is 224.16.32.1 and should not be changed.

9. Click **OK**.

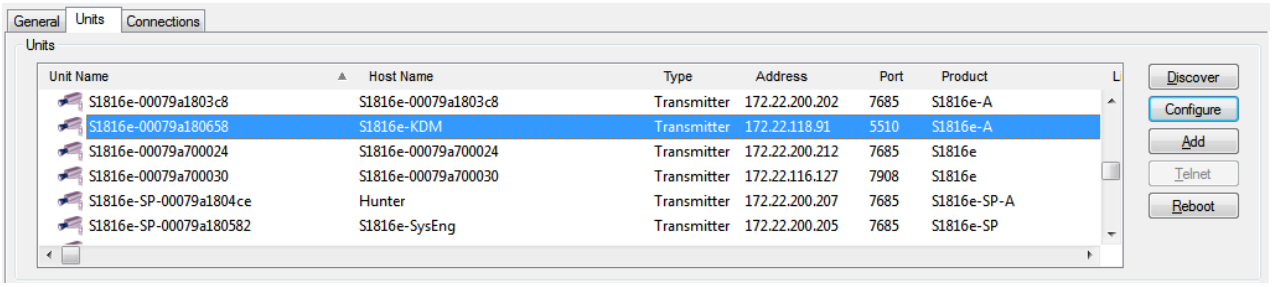
Discovering Devices

By default, the S1800e series devices are Dynamic Host Configuration Protocol (DHCP) enabled. Use SConfigurator to obtain the IP address of the encoder. If you have a DHCP server, the encoder will automatically obtain a valid IP configuration.

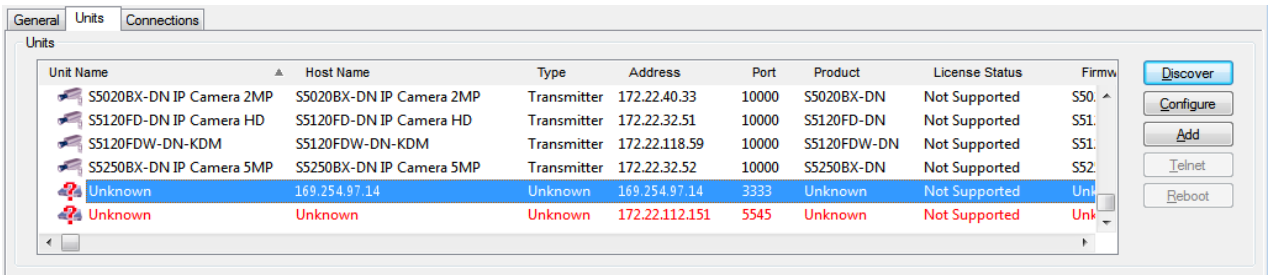
► Perform the following steps:

1. Start SConfigurator.
2. Select the **Units** tab, then click **Discover**. The information displayed for the will vary depending on whether your network is using a DHCP server or not.

   In a DHCP environment, the **Unit Name** column in the **Units** box displays the model name and a unique alpha-numeric value that corresponds to the MAC address of the encoder.



   In APIPA mode, the Unit Name column in the Units box displays Unknown and the first two octets of the IP address in the Address column is 169.254. Use the following procedure to set the IP address for the encoder.



IP Address Configuration

By default, all S1800e series devices are Dynamic Host Configuration Protocol (DHCP) enabled. If you have a DHCP server, the device will automatically obtain a valid IP configuration. If the DHCP configuration fails, the device assigns itself a temporary IP address based on the Automatic Private IP Addressing (APIPA) addressing format.

NOTE: If you plan on using the S1800e series devices with the Nextiva video management software, you need to disable the DHCP setting and manually set an IP address for the device.

The APIPA scheme, available on the Windows operating systems, allows a device to assign itself a temporary IP address until it receives a complete network configuration, either manually or from a DHCP server.

A device in APIPA mode does not reside on the same subnet as the other devices on the IP network. Therefore, it may not be able to view or be visible by the other devices. All Nextiva edge devices use the following temporary APIPA configuration:

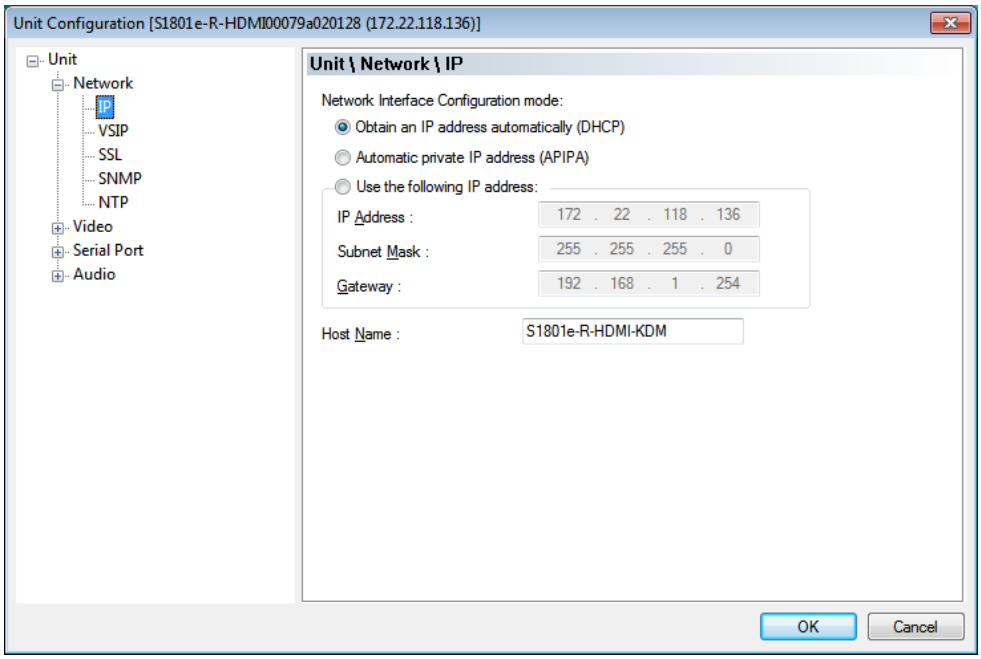
- IP address: 169.254.X.Y (where X and Y are based on the last two octets of the MAC address of the device)
- Subnet mask: 255.255.0.0
- Gateway: 169.254.*.*

Setting a DHCP IP Address

The S1800e series devices automatically obtains the IP network configuration from a DHCP server. Use this procedure if you are switching an encoder from a manual configuration to one using a DHCP server.

► Perform the following steps:

1. Start SConfigurator.
2. Select the **Units** tab, then click **Discover**.
3. Select the Nextiva device, and click **Configure**.
4. In the tree view, click **Unit > Network > IP**.



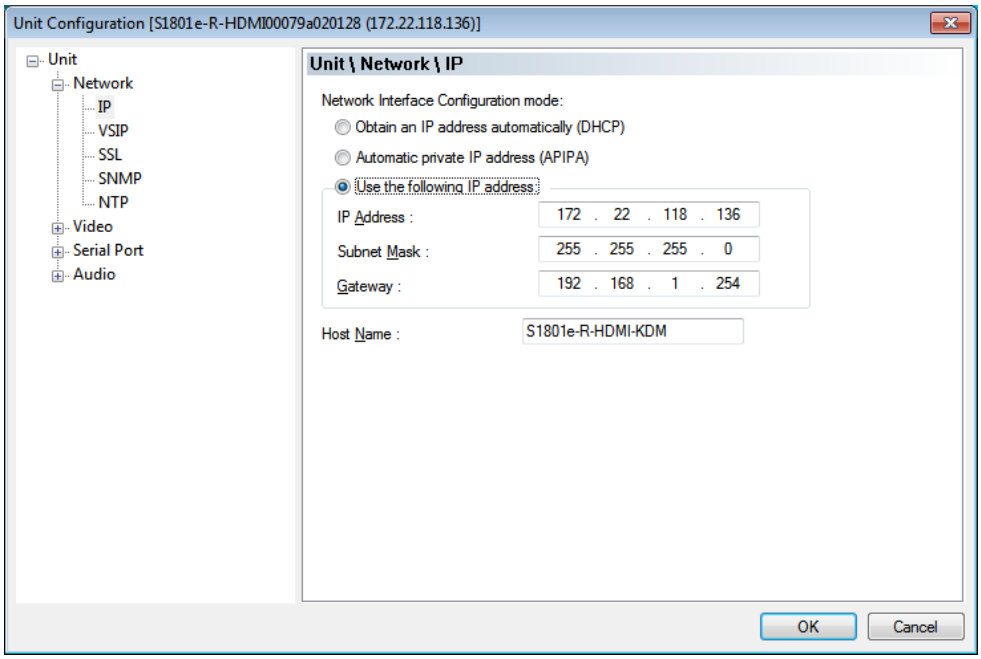
5. Select **Obtain an IP automatically (DHCP)**.
6. Click **OK** to close the **Unit Configuration** dialog box.
7. Click **Exit**.

Setting a Static IP Address

If you plan on using the S1800e series devices with the Nextiva video management software, you need to disable the DHCP setting and manually set a static IP address.

► Perform the following steps:

1. Start SConfigurator.
2. Select the **Units** tab, then click **Discover**.
3. Select the Nextiva device, and click **Configure**.
4. In the tree view, click **Unit > Network > IP**.



5. Select **Use the following IP address**.
6. In the **IP Address** box, type the device IP address.
7. In the **Subnet Mask** box, type the address specifying the subnet in which the IP address belongs.
8. In the **Gateway** box, type the IP address of the server that acts as an access point to another network.

NOTE: You do not need to use a gateway if the device communicates with other devices on the same subnet.

9. In the **Host Name** box, type a unique name for the device.
10. Click **OK** to close the **Unit Configuration** dialog box.
11. Click **Exit**.

Configuring the Serial Ports

Once the serial equipment is connected to the device, you need to ensure that both devices can communicate with each other.

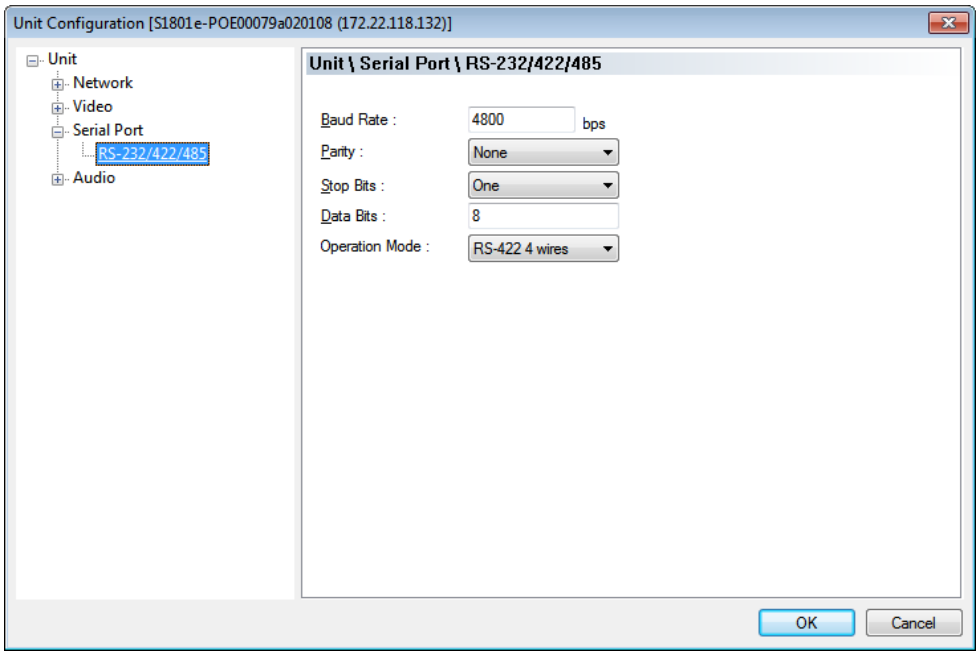
NOTE: For complete information about serial port parameters and the settings to use, refer to the serial equipment documentation or contact the product manufacturer.

Configuring the RS-232 Serial Port Using SConfigurator

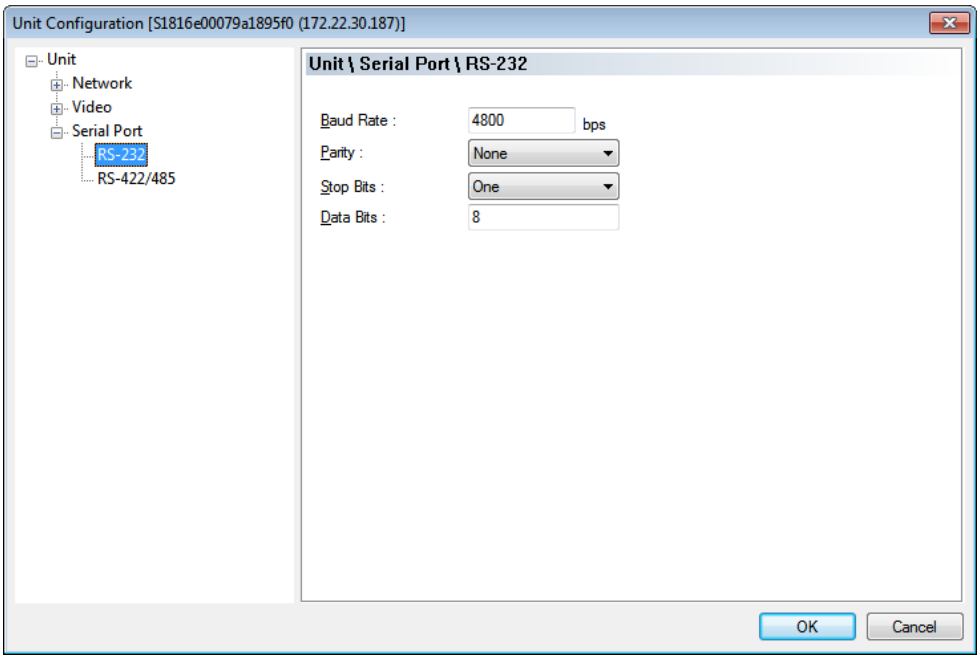
Use the following procedure to configure an RS-232 device using SConfigurator.

► Perform the following steps:

1. Start SConfigurator.
2. Select the **Units** tab, then click **Discover**.
3. Select the Nextiva device, and click **Configure**.
4. In the tree view, click **Unit > Serial Port**.
5. Select one of the following:
   - (Single- and Dual-Port devices) **RS-232/422/485**.



- (Multiport devices) **RS-232**.



6. In the **Baud Rate** list, select the data rate used by the serial equipment.
7. In the **Parity** list, select the parity bit used by the serial equipment. Parity bits determine if the data has been sent accurately over the network.
8. In the **Stop bits** list, select the stop bits used by the serial equipment. Stop bits let the receiver know that the byte being transmitted has ended.
9. In the **Data bits** list, select the data bits used by the serial equipment. Data bits represents the number of bits in each data that is sent over the network. Eight data bits are universally used in most applications.
10. (Single- and Dual-Port devices) In the **Operation** Mode, select the way the serial equipment interfaces with the device.
11. Click **OK** to close the **Unit Configuration** dialog box.
12. Click **Exit**.

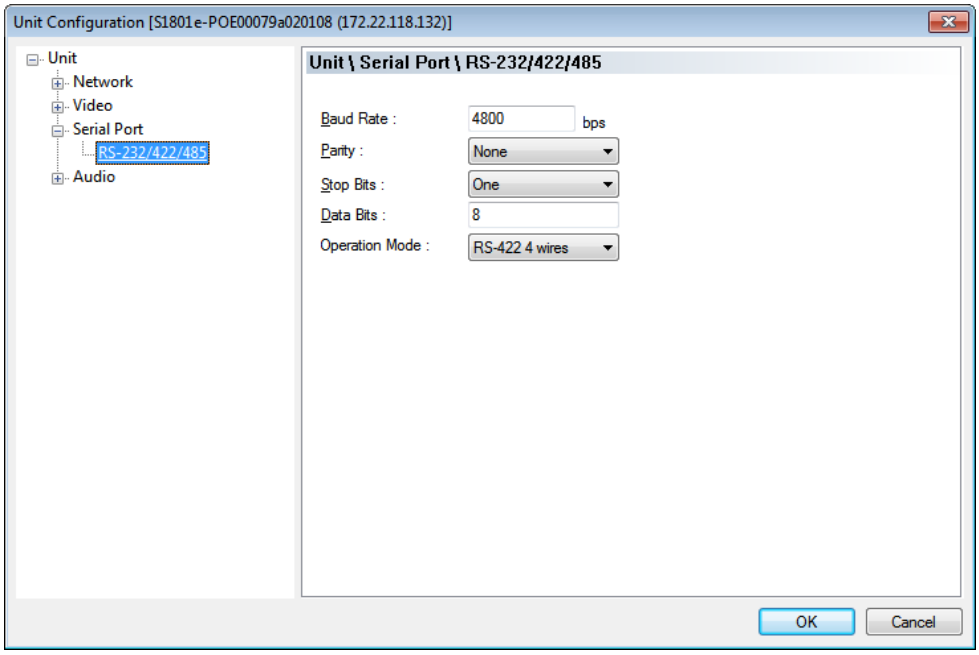
Configuring the RS-422/485 Serial Port Using SConfigurator

Use the following procedure to configure an RS-232 device using SConfigurator.

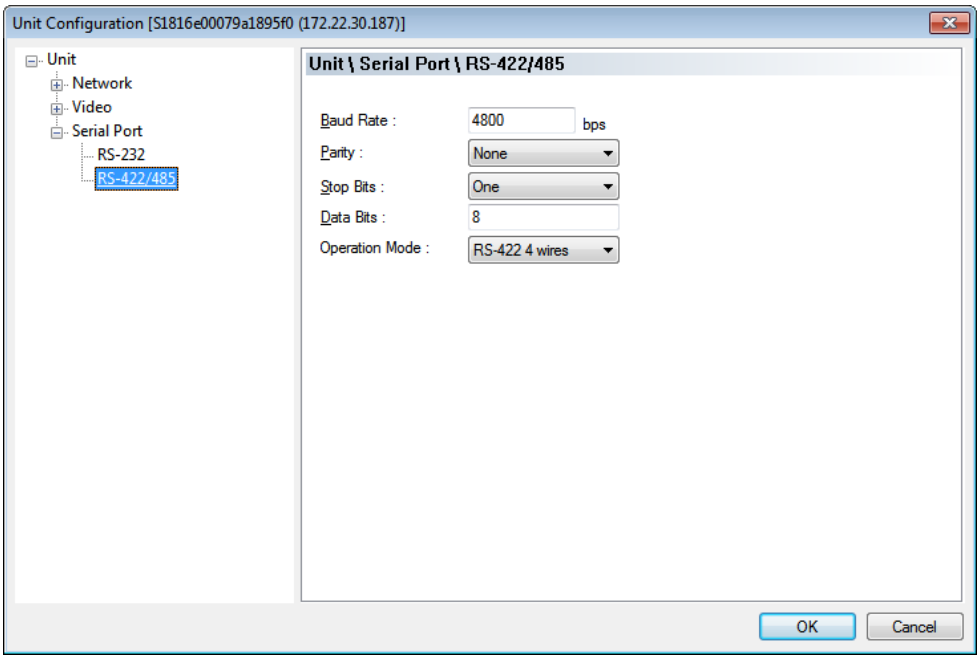
► Perform the following steps:

1. Start SConfigurator.
2. Select the **Units** tab, then click **Discover**.
3. Select the Nextiva device, and click **Configure**.
4. In the tree view, click **Unit > Serial Port**.

5. Select one of the following:
   - (Single- and Dual-Port devices) **RS-232/422/485**.



   - (Multiport devices) **RS-422/485**.



6. In the **Baud Rate** list, select the data rate used by the serial equipment.
7. In the **Parity** list, select the parity bit used by the serial equipment. Parity bits determine if the data has been sent accurately over the network.

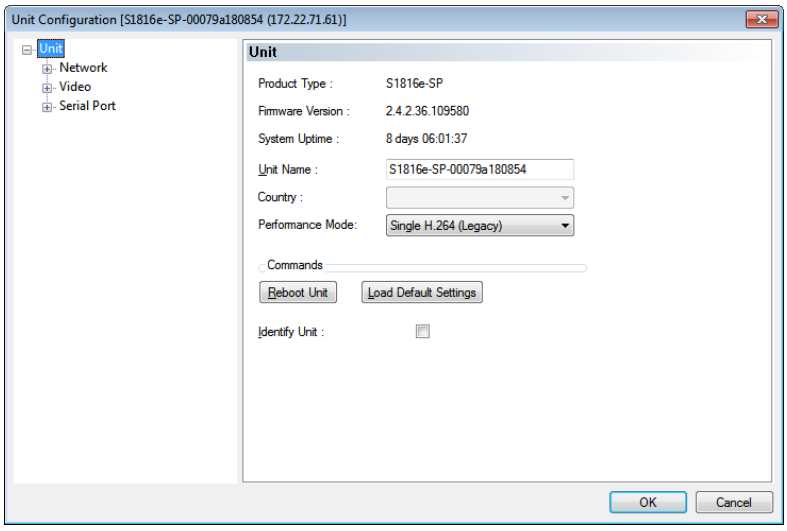
8. In the **Stop bits** list, select the stop bits used by the serial equipment. Stop bits let the receiver know that the byte being transmitted has ended.
9. In the **Data bits** list, select the data bits used by the serial equipment. Data bits represents the number of bits in each data that is sent over the network. Eight data bits are universally used in most applications.
10. (Single- and Dual-Port devices) In the **Operation** Mode, select the way the serial equipment interfaces with the device.
11. Click **OK** to close the **Unit Configuration** dialog box.
12. Click **Exit**.

Setting the H.264 Encoding Mode for the S1816e-SP or S1816e-SR

The S1816e--SP and S1816e-SR supports H.264 and MPEG-4 video on all 16 ports and can be configured in dual or triple stream modes. By default, the S1816e-SP is set to dual stream mode consisting of a single high-performance H.264 stream and a single MPEG-4 stream per video input. However, you can set it to triple stream mode consisting of two H.264 streams with lower resolution and framerate and a single MPEG-4 stream per video input.

► Perform the following steps:

1. Start SConfigurator.
2. Select the **Units** tab, then click **Discover**.
3. Select the Nextiva device, and click **Configure**.
4. In the tree view, click **Unit**.



5. In the **Unit Name** box, from the Performance Mode list, select the H.264 streaming mode. You can select from:

- **Single H.264**: A single high-performance H.264 stream and a single MPEG-4 stream per video input.
- **Single H.264 (Legacy)**: A single high-performance H.264 stream and a single MPEG-4 stream per video input.
- **Dual H.264**: Two H.264 streams with lower resolution and framerate and a single MPEG-4 stream per video input.

6. Click **Reboot Unit** for the change to take effect.
7. Click **OK** to close the **Unit Configuration** dialog box.
8. Click **Exit**.

CAUTION: Once you have added the S1816e--SP or S1816e-SR to Nextiva Control Center, changing the mode requires that you delete the device from Nextiva Control Center and then use SConfigurator to change the mode; you will be required to add the device again in Nextiva Control Center.

Setting the Video Standard

The S1800e series device can run in one of two video standards (NTSC or PAL) and you can use different standards when deploying the devices across multiple sites. The two video standards settings are:

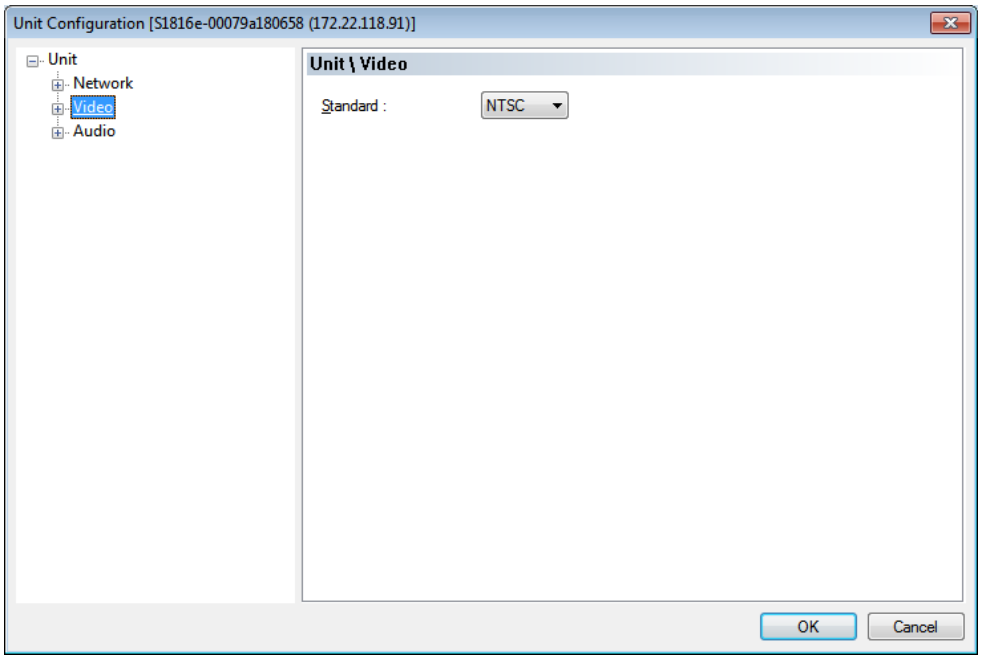
National Television Standards Committee (NTSC) is the standard that is used in most of the Americas, a number of South American countries, and some Asian countries, including Japan. NTSC uses the format of 525 picture lines and a 60Hz lighting frequency.

Phase Alternation by Line (PAL) is the standard in the United Kingdom, much of Western Europe, several South American countries, some Middle East and Asian countries, several African countries, Australia, New Zealand, and other Pacific island countries. PAL uses the format of 625 picture lines and a 50Hz lighting frequency.

CAUTION: You should change the video profile settings using a video management software.

► Perform the following steps:

1. Start SConfigurator.
2. Select the **Units** tab, then click **Discover**.
3. Select the Nextiva device, and click **Configure**.
4. In the tree view, click **Unit > Video**.



5. In the **Standard** list, select the analog display standard of the region. You can select from the following:
   - **NTSC**
   - **PAL**
6. Click **OK**.
7. Click **Exit**.

NOTE: The device will reboot after you click OK.

Video Profile

Video Profiles define both the quality of the video images and the storage and bandwidth requirements of the video files. All Video Profiles include at least the following settings: frame rate, resolution, and bit rate. For each video input, you can configure the image parameters. With each video input, the S1800e series devices supports up to quad-stream encoding (triple-stream encoding on the multiport devices and quad-stream encoding on the single/dual port devices). Encoding the video inputs provides multiple live-view streams using different sets of parameters providing high or low quality video for analysis and a single recording stream using H.264 video compression providing high quality video at a substantially lower bit rates than previous standards.

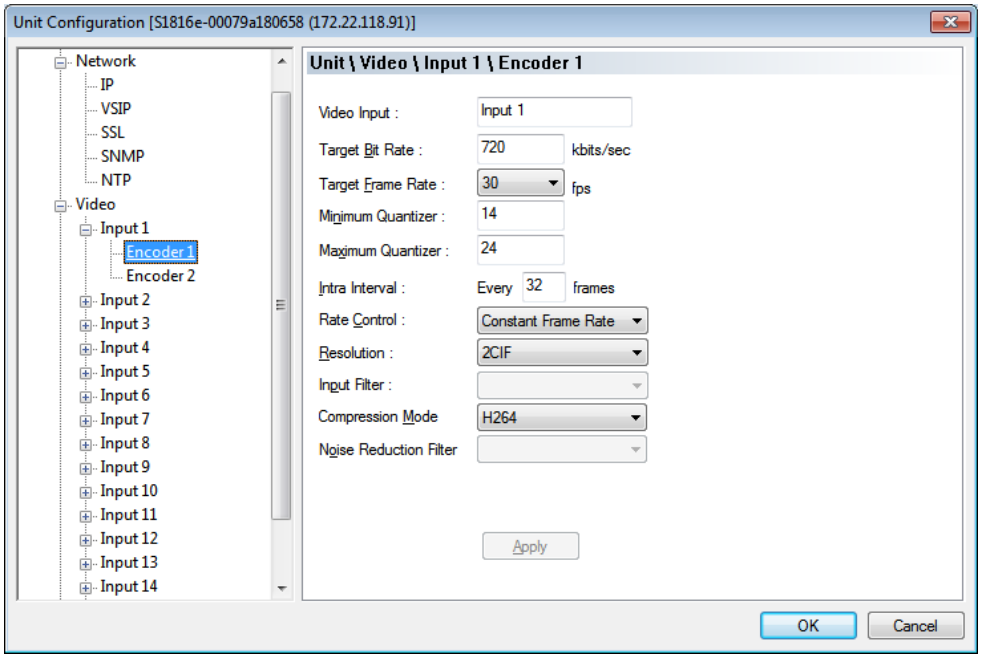
NOTE: Nextiva video management software currently supports a maximum of two streams and provide four video profiles for the S1800e series devices. For more information configuring video profiles, refer to the Nextiva VMS *Administrator Guide*.

Configuring the Device Video Properties

For each video input, the S1800e series devices can send video with different sets of parameters to different locations. The single/dual port devices support quad-stream encoding with three streams using H.264 compression and one using MJPEG compression. The multiport devices support triple-stream encoding provides two streams using H.264 compression and one using MPEG4 compression. You can customize each device in terms of frame rate and resolution to meet each system requirements.

► Perform the following steps:

1. Start SConfigurator.
2. Select the **Units** tab, then click **Discover**.
3. Select the Nextiva device, and click **Configure**.
4. In the tree view, click **Unit > Video > Input > Encoder**.



5. For each input, set the values for the following:
   - **Target Bit Rate:** The rate in kbps at which the device sends data. Use a higher bit rate to record movements, noise and details. The bit rate can range from 9 kbps to 6000kbps.
   - **Target Frame Rate:** The number of frames captured or recorded each seconds.
     - **NTSC:** select from: 1, 2, 3, 3.75, 5, 6, 7.5, 10, 15, or 30 fps.
     - **PAL:** select from: 1, 2.5, 5, 6.75, 8.33, 12.5, or 25 fps
   - **Quantizer (Minimum and Maximum):** The process of safely discarding information from a video without a significant loss in visual quality. Using a higher quantizer value decreases

video quality and creates a smaller file size. Using a low quantizer value increases video quality and creates a larger file size. The available range is between 2 and 31.

NOTE: To maintain the video frame rate, you should set the maximum quantizer to 31. If the quality of each frame is more important, you should reduce the quantizer value; for example, a maximum quantizer of 5 keeps a good image quality, but skips frames when motion is high.

- **Intra Interval:** The frequency at which a complete video frame (I-frame) is sent by the device. The available values are in the 0 – 1000 range. Zero indicates that no I-frame will be sent automatically by the device.
- **Rate Control Mode:** The mode controlling the bit rate variation. The available modes are:
  - **Constant Bit Rate (CBR):** This mode is the most effective to maintain the target bit rate. Video quality may suffer (frames may be skipped) and the frame rate may decrease. This mode should be used when transmitting video over networks that have very limited bandwidths, and with an intra interval value of 0 (default).
  - **Constant Frame Rate (CFR):** This mode maintains the target frame rate. Video quality may suffer and the bit rate may exceed the target value.
- **Resolution:** The total number of lines (width × height) in the video image. The greater the number of lines produces a more detailed, clearer and sharper image, but requires more bandwidth and storage. The following resolutions are available:
  - **CIF:** NTSC (352 × 240) and PAL (352 × 288)
  - **2CIF:** NTSC (704 × 240) and PAL (704 × 288)
  - **4CIF:** NTSC (704 × 480) and PAL (704 × 576)
  - **D1**: NTSC (720 × 486) and PAL (720 × 576)
- **Compression Mode:** This parameter cannot be changed. The compression mode column displays the method of encoding currently being used on the Edge device. For the multiport devices, encoders 1 and 2 are set to H.264 and encoder 3 is set to MPEG4. For the single/dual devices, encoders 1, 2 and 3 are set to H.264 and encoder 4 is set to MJPEG.

6. Click **Apply**.
7. Click **OK**.
8. Click **Exit**.

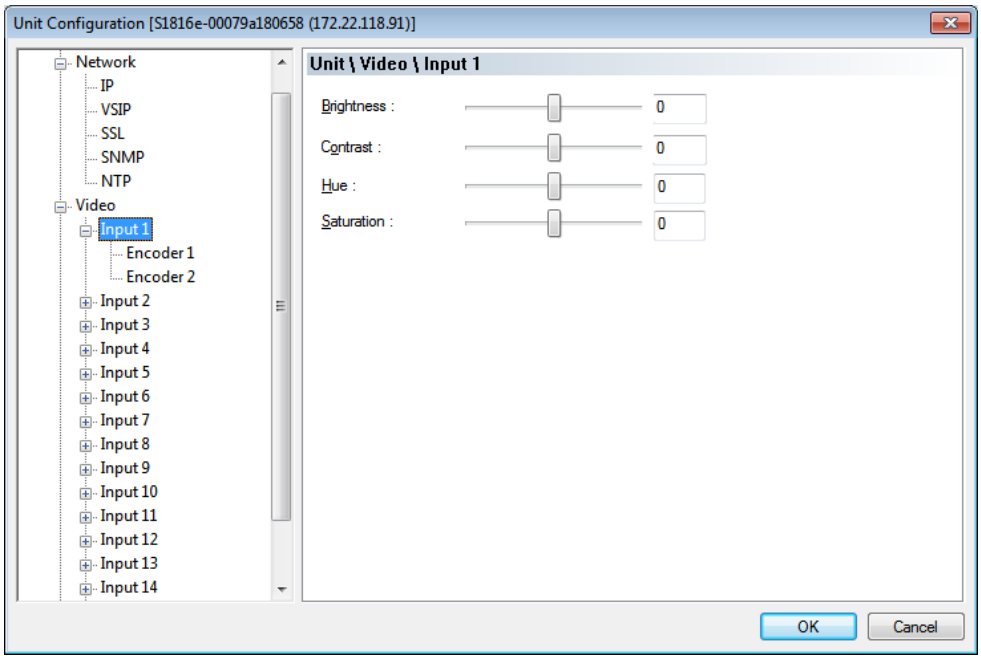
Configuring the Input Properties

The number of video inputs varies depending on the device. For each video input, you can enhance the video image by adjusting the value of brightness, contrast, hue and saturation.

► Perform the following steps:

1. Start SConfigurator.
2. Select the **Units** tab, then click **Discover**.
3. Select the Nextiva device, and click **Configure**.

4. In the tree view, click **Unit > Video > Input**.



5. For each video settings, move the slider to the left or right to change the setting.
   - **Brightness:** Changing the brightness level allows you to increase or decrease highlights and shadows, making them darker or lighter. The values range from -128 to 127.
   - **Contrast:** This refers to the difference between the lightest and darkest parts of the image. The values range from -128 to 127.
   - **Hue:** This refers to the color classification given to the image based on the colors found in the color spectrum. The values range from -128 to 127.
   - **Saturation:** This refers to the intensity of the colors in the image. The values range from -128 to 127.
6. Click **OK**.
7. Click **Exit**.

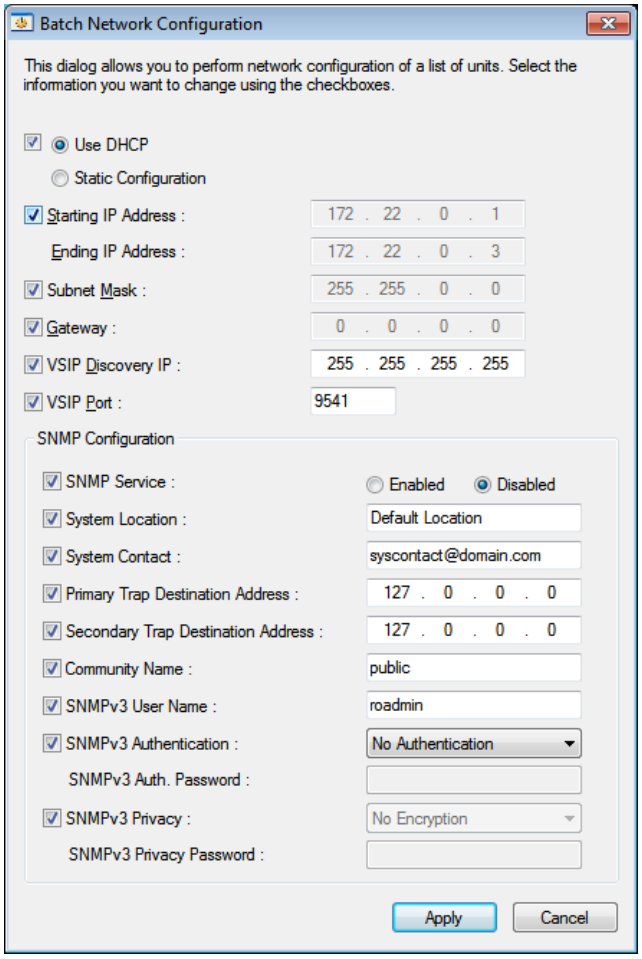
Setting the SNMP Properties

Simple Network Management Protocol (SNMP) is a protocol used by network management systems to manage network equipments from a central location. The S1800e devices are SNMP-compliant and store data about themselves in Management Information Bases (MIBs) and return this data (SNMP Traps) to the SNMP requesters.

► Perform the following steps:

1. Start SConfigurator.
2. Select the **Units** tab, then click **Discover**.

3. Select the Nextiva device, and click **Configure**.
4. In the **Units** box, right-click the S1800e device, then select **Batch Network Configuration**.


Batch Network Configuration
This dialog allows you to perform network configuration of a list of units. Select the information you want to change using the checkboxes.
Use DHCP
Static Configuration
Starting IP Address : 172 . 22 . 0 . 1
Ending IP Address : 172 . 22 . 0 . 3
Subnet Mask : 255 . 255 . 0 . 0
Gateway : 0 . 0 . 0 . 0
VSIP Discovery IP : 255 . 255 . 255 . 255
VSIP Port : 9541
SNMP Configuration
SNMP Service : Enabled Disabled
System Location : Default Location
System Contact : syscontact@domain.com
Primary Trap Destination Address : 127 . 0 . 0 . 0
Secondary Trap Destination Address : 127 . 0 . 0 . 0
Community Name : public
SNMPv3 User Name : roadmin
SNMPv3 Authentication : No Authentication
SNMPv3 Auth. Password :
SNMPv3 Privacy : No Encryption
SNMPv3 Privacy Password :
Apply
Cancel

5. In the **SNMP** panel, select the **Enabled** check box enable the SNMP service.
6. In the **System Location** box, type the location for the Edge device.
7. In the **System Contact** box, type the e-mail address of the network administrator.
8. In the **Primary Trap Destination Address** box, type the IP address of the primary server that will receive the SNMP Traps.
9. In the **Backup Trap Destination Address** box, type the IP address of the backup server that will receive the SNMP Traps in case the primary server is unavailable.
10. In the **Community Name** box, type the name of the group where you want the edge device to be a member.

NOTE: The Edge device will only respond to requests from management servers that belong to the same community.

11. In the **SNMPv3 User Name** box, type the name of the SNMP user.

12. In the **SNMPv3 User Authentication Type** list, select the authentication algorithm for SNMP requests. You can select from the following:
    - **No Authentication:** No authentication is used.
    - **MD5 Authentication:** The Message Digest Version 5 (MD5) hash function is used to determine that the message is from a valid source.
    - **SHA Authentication:** The Secure Hash Algorithm (SHA) has function is used to determine that the message is from a valid source.
13. In the **SNMPv3 User Auth Password** box, type a password for the user.
14. In the **SNMPv3 Privacy Protocol** list, select the privacy protocol to encrypt the contents of the data. You can select from the following:
    - **No Encryption:** No encryption is used.
    - **DES Encryption:** The Data Encryption Standard (DES) algorithm is used to encrypt the data.
    - **AES Encryption:** The Advanced Encryption Standard (AES) algorithm is used to encrypt the data.
15. In the **SNMPv3 Privacy Password** box, type a password for the privacy protocol.
16. Click **Apply**.
17. Click **Close**.

NOTE: The device will reboot.

Audio Properties

The S1801e, S1802e, S1808e-A and S1816e-A supports bi-directional audio: audio input and output. Audio input allows you to capture audio signals from a camera, provided that it supports audio, at the same time it captures video.

Currently, the S1800e series devices support the following audio formats:

Codec	Sampling Frequency	Bits per Sample	Bitrate
PCM (no compression)	8 kHz	16bits/data	28 kbits/sec (8kHz)
G.711/μ-Law (8 bits)	8 kHz	14 bits signed/data	64 kbits/sec

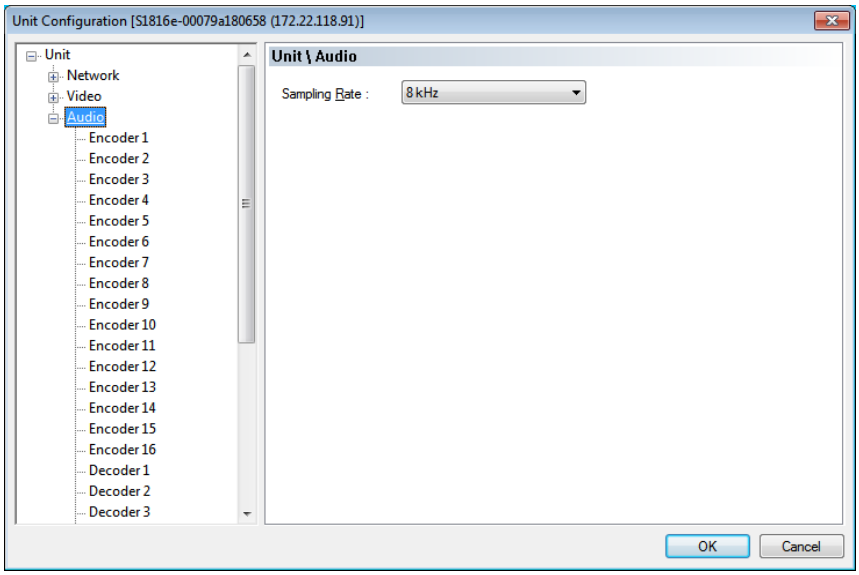
NOTE: The S1816e-SP and S1816e-SR models do not support audio.

Setting the Audio Sampling Rate

Expressed in hertz (Hz), sampling rate is the rate at which samples of an analog signal are taken in order to be converted into digital form. The device uses 8 kHz.

► Perform the following steps:

1. Start SConfigurator.
2. Select the **Units** tab, then click **Discover**.
3. Select the Nextiva device, and click **Configure**.
4. In the tree view, click **Unit > Audio**.



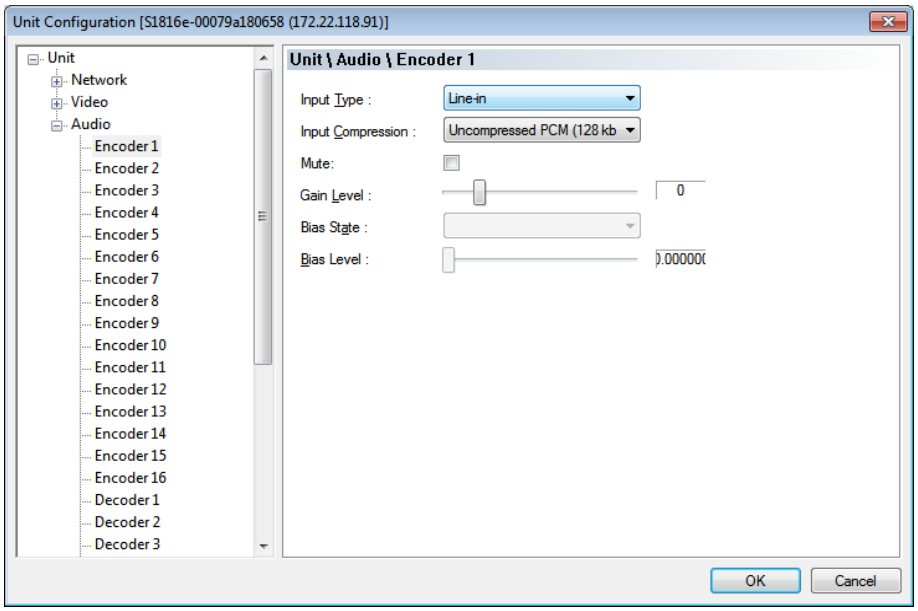
5. From the **Sampling Rate** list, select 8 kHz.
6. Click **OK**.

Setting the Audio Encoder Properties

The S1801e, S1802e, S1808e-A and S1816e-A supports bi-directional audio: audio input and output. Audio input allows you to capture audio signals from a camera, provided that it supports audio, at the same time it captures video.

► Perform the following steps:

1. Start SConfigurator.
2. Select the **Units** tab, then click **Discover**.
3. Select the Nextiva device, and click **Configure**.
4. In the tree view, click **Unit > Audio > Encoder**.
5. Select an Encoder to configure.



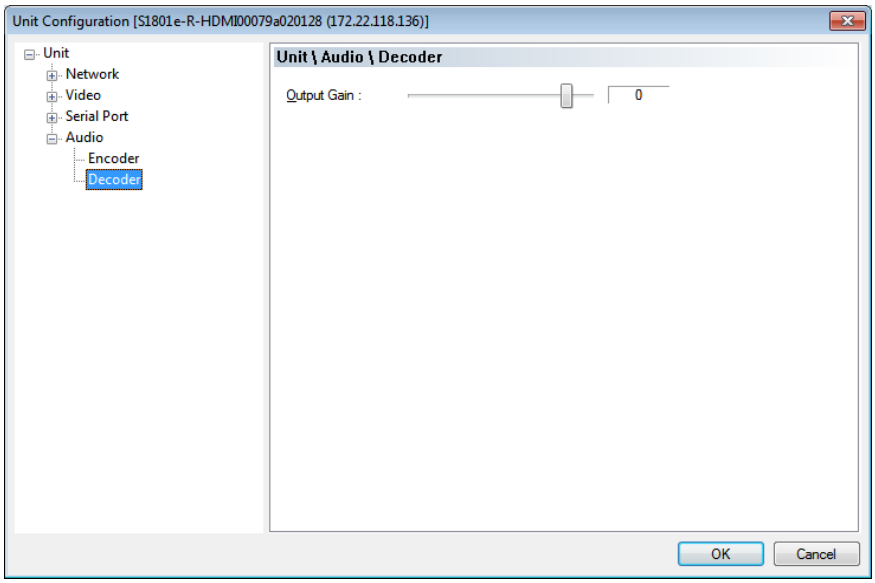
6. Set the value for the following settings:
   - **Input Type**: Select Line-in or Mic (with pre-amp).
   - **Input Compression**: Select Uncompressed PCM (128 kbps) or µ-LAW (64 kbps).
   - **Gain State**: Select Enabled or Disabled.
   - **Gain Level**: Move the slider to the left or right.
   - **Bias State**: Select Enabled or Disabled.
   - **Bias Level**: Move the slider to the left or right.
7. Click **OK**.

Setting the Audio Decoder Properties

The audio output properties allow you to set the Gain to increase the amplitude of the input signal.

► Perform the following steps:

1. Start SConfigurator.
2. Select the **Units** tab, then click **Discover**.
3. Select the Nextiva device, and click **Configure**.
4. In the tree view, click **Unit > Audio > Decoder**.



5. Move the **Output Gain** slider to the left or right.
6. Click **OK**.

Chapter 5

Using the Web Interface for Configuration

Once you have connected all the equipment to the device, you can begin configuring the device to ensure that it can communicate with the attached devices and with a video management software over the network. In order to configure the device, you first need to obtain the IP address using SConfigurator.

The S1800e series devices have a self-contained web server allowing you to connect directly to it using a web browser. The Web Interface is a browser-based tool that allows you to configure the S1800e series devices. For complete information on the Web Interface, refer to the Web Interface User Guide.

NOTE: The default username and password for the Web Interface is admin. We recommend that you change the default password for the Edge device to a more secure password.

The following topics are discussed:

IP Address Configuration 73
Configuring the Serial Ports 77
Setting the Video Standard 79
Video Profile 82
Setting the SNMP Properties 90
Audio Properties 92
Activating Nextiva Onboard Analytics 96
Configuring Nextiva Onboard Analytics 97
Activating Agent Vi Video Analytics 98
Configuring Agent Vi Video Analytics 100
Setting the On-Screen Display for the Decoders 101
Recording to the Storage Device 102

IP Address Configuration

By default, all S1800e series devices are Dynamic Host Configuration Protocol (DHCP) enabled. If you have a DHCP server, the device will automatically obtain a valid IP configuration. If the DHCP configuration fails, the device assigns itself a temporary IP address based on the Automatic Private IP Addressing (APIPA) addressing format.

NOTE: If you plan on using the S1800e series devices with the Nextiva video management software, you need to disable the DHCP setting and manually set an IP address for the device.

The APIPA scheme, available on the Windows operating systems, allows a device to assign itself a temporary IP address until it receives a complete network configuration, either manually or from a DHCP server.

A device in APIPA mode does not reside on the same subnet as the other devices on the IP network. Therefore, it may not be able to view or be visible by the other devices. All Nextiva edge devices use the following temporary APIPA configuration:

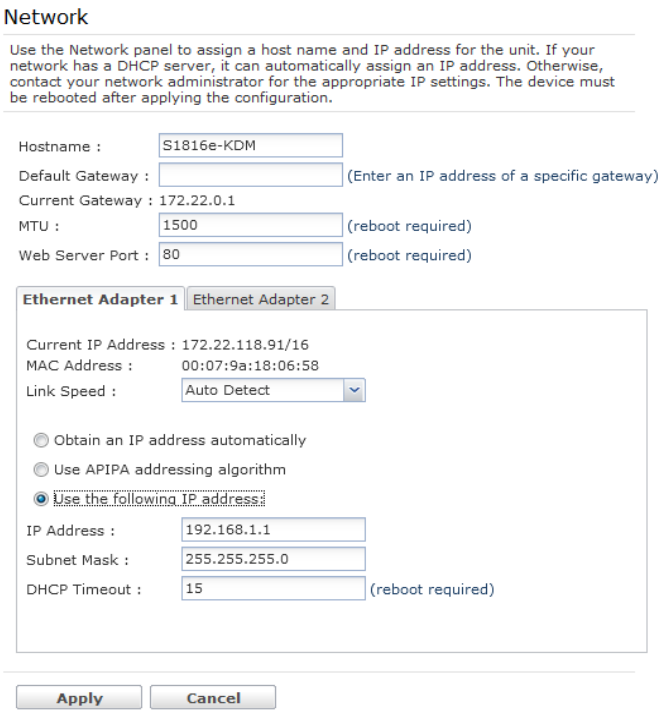
- IP address: 169.254.X.Y (where X and Y are based on the last two octets of the MAC address of the device)
- Subnet mask: 255.255.0.0
- Gateway: 169.254.*.*

Setting a DHCP IP Address

The S1800e series devices automatically obtains the IP network configuration from a DHCP server. Use this procedure if you are switching an encoder from a manual configuration to one using a DHCP server.

► Perform the following steps:

1. Start the Web Interface.
2. From the tree, select **Configuration > Network**.


Network
Use the Network panel to assign a host name and IP address for the unit. If your network has a DHCP server, it can automatically assign an IP address. Otherwise, contact your network administrator for the appropriate IP settings. The device must be rebooted after applying the configuration.
Hostname :
S1816e-KDM
Default Gateway :
(Enter an IP address of a specific gateway)
Current Gateway : 172.22.0.1
MTU :
1500
(reboot required)
Web Server Port :
80
(reboot required)
Ethernet Adapter 1
Ethernet Adapter 2
Current IP Address : 172.22.118.91/16
MAC Address :
00:07:9a:18:06:58
Link Speed :
Auto Detect
Obtain an IP address automatically
Use APIPA addressing algorithm
Use the following IP address:
IP Address :
192.168.1.1
Subnet Mask :
255.255.255.0
DHCP Timeout :
15
(reboot required)
Apply
Cancel

3. In the **Hostname** box, type a unique name for the Edge device.
4. In the **Default Gateway** box, type the IP address of the server that acts as an access point to another network. You can obtain the IP address of the default gateway by asking the network administrator.

NOTE: You do not need to use a gateway if the device communicates with other Edge devices on the same subnet.

5. In the **MTU** box, type largest protocol data unit that the layer can pass onwards.
6. In the **Web Server Port** box, type the http port number to use as an access point to the internet. The default value is 80.
7. In the **Ethernet Adapter 1** tab:
   a. In the **Link Speed** list, select the speed and mode of the network:
      - **Auto detect**: The unit will automatically detect the network speed and mode.
      - **1 Gbps full duplex**: The unit sends and receives 1 Gbps of data in both directions at the same time.
      - **1 Gbps half duplex**: The unit sends and receives 1 Gbps of data in both directions, but not at the same time.
      - **100 Mbps full duplex**: The unit sends and receives 100 Mbps of data in both directions at the same time.
      - **100 Mbps half duplex**: The unit sends and receives 100 Mbps of data in both directions, but not at the same time.

- **10 Mbps full duplex**: The unit sends and receives 10 Mbps of data in both directions at the same time.
- **10 Mbps half duplex**: The unit sends and receives 10 Mbps of data in both directions, but not at the same time.

NOTE: If you are unsure of the network settings, select Auto detect to automatically detect the speed and mode of the network. You can also contact the network administrator to provide you with the correct settings.

b. Click **Obtain an IP address automatically**.

c. In the **DHCP Timeout** box, type the number of seconds to wait for a response from a DHCP server before using the APIPA address.

8. Click **Apply**.

NOTE: The **Ethernet Adapter 2** tab corresponds to LAN 2 on the S1808e, S1808e-A, S1816e, S1816e-A and S816e-SP encoders, and is used by support for debugging purposes. The S1816e-SR model does not have a second ethernet port.

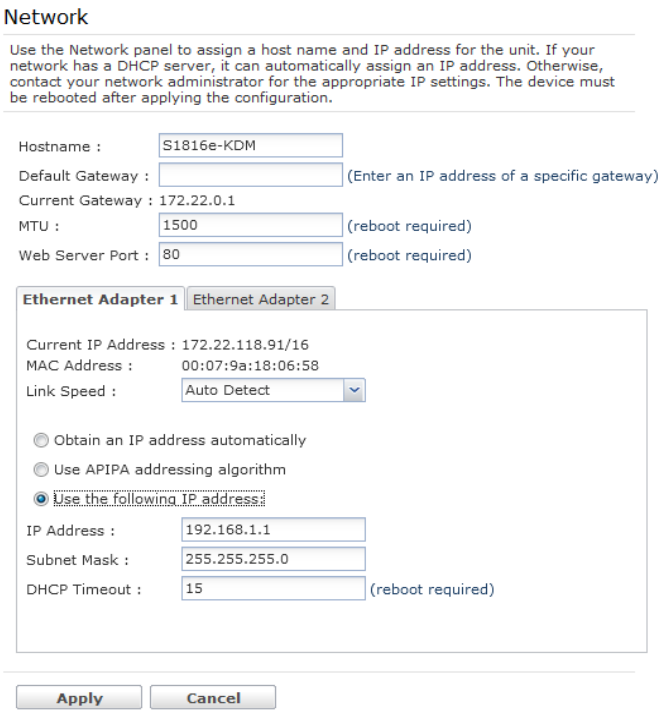
The default IP address of LAN 2 is set to 172.29.204.254 with subnet mask 255.255.255.252. Any computer connecting to the S1800e multiport encoders must use the following IP address 172.29.204.253.

Setting a Static IP Address

If you plan on using the S1800e series devices with the Nextiva video management software, you need to disable the DHCP setting and manually set a static IP address.

► Perform the following steps:

1. Start the Web Interface.
2. From the tree, select **Configuration > Network**.


Network
Use the Network panel to assign a host name and IP address for the unit. If your network has a DHCP server, it can automatically assign an IP address. Otherwise, contact your network administrator for the appropriate IP settings. The device must be rebooted after applying the configuration.
Hostname :
S1816e-KDM
Default Gateway :
(Enter an IP address of a specific gateway)
Current Gateway : 172.22.0.1
MTU :
1500
(reboot required)
Web Server Port :
80
(reboot required)
Ethernet Adapter 1
Ethernet Adapter 2
Current IP Address : 172.22.118.91/16
MAC Address :
00:07:9a:18:06:58
Link Speed :
Auto Detect
Obtain an IP address automatically
Use APIPA addressing algorithm
Use the following IP address:
IP Address :
192.168.1.1
Subnet Mask :
255.255.255.0
DHCP Timeout :
15
(reboot required)
Apply
Cancel

3. In the **Hostname** box, type a unique name for the Edge device.
4. In the **Default Gateway** box, type the IP address of the server that acts as an access point to another network. You can obtain the IP address of the default gateway by asking the network administrator.

NOTE: You do not need to use a gateway if the device communicates with other Edge devices on the same subnet.

5. In the **MTU** box, type largest protocol data unit that the layer can pass onwards.
6. In the **Web Server Port** box, type the http port number to use as an access point to the Internet. The default value is 80.
7. In the **Ethernet Adapter 1** tab:
   a. In the **Link Speed** list, select the speed and mode of the network:
      - **Auto detect**: The unit will automatically detect the network speed and mode.
      - **1 Gbps full duplex**: The unit sends and receives 1 Gbps of data in both directions at the same time.
      - **1 Gbps half duplex**: The unit sends and receives 1 Gbps of data in both directions, but not at the same time.
      - **100 Mbps full duplex**: The unit sends and receives 100 Mbps of data in both directions at the same time.
      - **100 Mbps half duplex**: The unit sends and receives 100 Mbps of data in both directions, but not at the same time.

- **10 Mbps full duplex**: The unit sends and receives 10 Mbps of data in both directions at the same time.
- **10 Mbps half duplex**: The unit sends and receives 10 Mbps of data in both directions, but not at the same time.

NOTE: If you are unsure of the network settings, select Auto detect to automatically detect the speed and mode of the network. You can also contact the network administrator to provide you with the correct settings.

b. Click **Use the following IP Address**.

c. In the **IP Address** box, type the device IP address.

d. In the **Subnet Mask** box, type the address specifying the subnet in which the IP address belongs.

e. In the **Gateway** box, type the IP address of the server that acts as an access point to another network.

NOTE: You do not need to use a gateway if the device communicates with other devices on the same subnet.

8. Click **Apply**.

NOTE: The **Ethernet Adapter 2** tab corresponds to LAN 2 on the S1808e, S1808e-A, S1816e, S1816e-A and S816e-SP encoders, and is used by support for debugging purposes. The S1816e-SR model does not have a second Ethernet port.

The default IP address of LAN 2 is set to 172.29.204.254 with subnet mask 255.255.255.252. Any computer connecting to the S1800e multiport encoders must use the following IP address 172.29.204.253.

Configuring the Serial Ports

Once the serial equipment is connected to the device, you need to ensure that both devices can communicate with each other.

NOTE: For complete information about serial port parameters and the settings to use, refer to the serial equipment documentation or contact the product manufacturer.

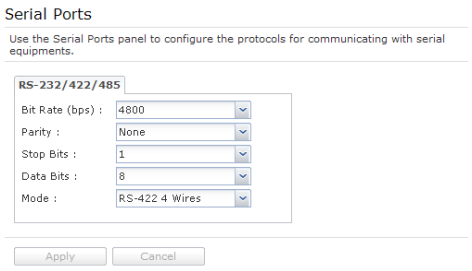
Configuring the RS-232 Serial Port

Use the following procedure to configure an RS-232 device using the Web Interface.

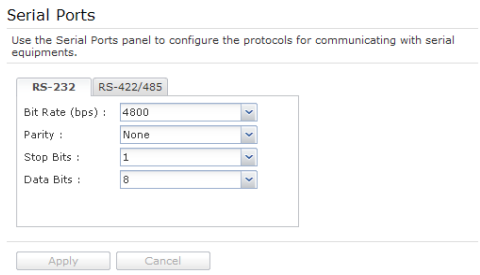
► Perform the following steps:

1. Start the Web Interface.
2. From the tree, select **Configuration > Serial Port**.

3. Select one of the following:
   - (Single- and Dual-Port devices) **RS-232/422/485**.



   - (Multiport devices) **RS-232**.



4. In the **Baud Rate** list, select the data rate used by the serial equipment.
5. In the **Parity** list, select the parity bit used by the serial equipment. Parity bits determine if the data has been sent accurately over the network.
6. In the **Stop bits** list, select the stop bits used by the serial equipment. Stop bits let the receiver know that the byte being transmitted has ended.
7. In the **Data bits** list, select the data bits used by the serial equipment. Data bits represents the number of bits in each data that is sent over the network. Eight data bits are universally used in most applications.
8. (Single- and Dual-Port devices) In the **Mode**list, select the way the serial equipment interfaces with the device.
9. Click **Apply**.

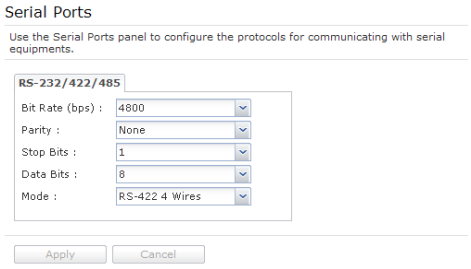
Configuring the RS-422/485 Serial Port

Use the following procedure to configure an RS-422/485 device using the Web Interface.

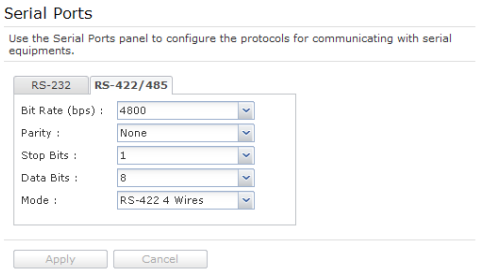
► Perform the following steps:

1. Start the Web Interface.
2. From the tree, select **Configuration > Serial Port**.

3. Select one of the following:
   - (Single- and Dual-Port devices) **RS-232/422/485**.



   - (Multiport devices) **RS-422/485**.



4. In the **Baud Rate** list, select the data rate used by the serial equipment.
5. In the **Parity** list, select the parity bit used by the serial equipment. Parity bits determine if the data has been sent accurately over the network.
6. In the **Stop bits** list, select the stop bits used by the serial equipment. Stop bits let the receiver know that the byte being transmitted has ended.
7. In the **Data bits** list, select the data bits used by the serial equipment. Data bits represents the number of bits in each data that is sent over the network. Eight data bits are universally used in most applications.
8. (Single- and Dual-Port devices) In the **Mode**list, select the way the serial equipment interfaces with the device.
9. Click **Apply**.

Setting the Video Standard

The S1800e series device can run in one of two video standards (NTSC or PAL) and you can use different standards when deploying the devices across multiple sites. The two video standards settings are:

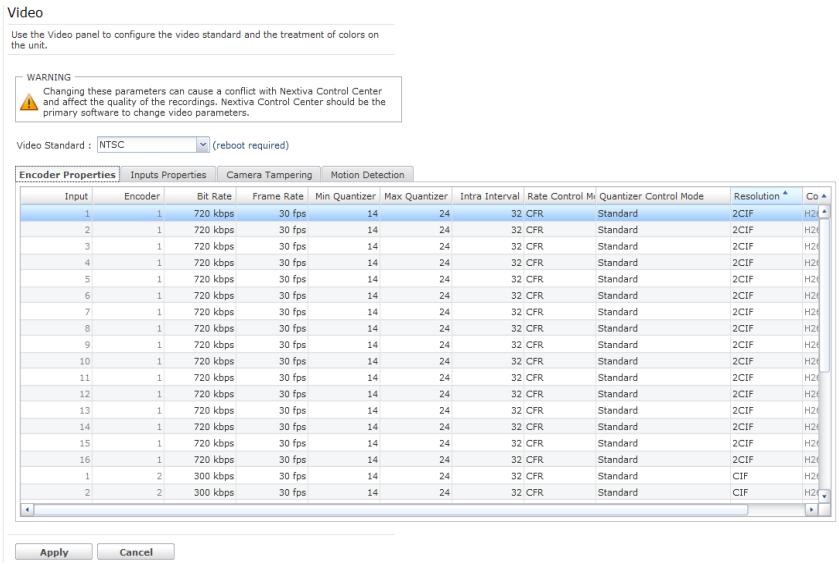
National Television Standards Committee (NTSC) is the standard that is used in most of the Americas, a number of South American countries, and some Asian countries, including Japan. NTSC uses the format of 525 picture lines and a 60Hz lighting frequency.

Phase Alternation by Line (PAL) is the standard in the United Kingdom, much of Western Europe, several South American countries, some Middle East and Asian countries, several African countries, Australia, New Zealand, and other Pacific island countries. PAL uses the format of 625 picture lines and a 50Hz lighting frequency.

CAUTION: You should change the video profile settings using a video management software.

► Perform the following steps:

1. Start the Web Interface.
2. From the tree, select **Configuration > Video**.


Video
Use the Video panel to configure the video standard and the treatment of colors on the unit.
WARNING
Changing these parameters can cause a conflict with Nextiva Control Center and affect the quality of the recordings. Nextiva Control Center should be the primary software to change video parameters.
Video Standard : NTSC (reboot required)
Encoder Properties
Inputs Properties
Camera Tampering
Motion Detection
Input Encoder Bit Rate Frame Rate Min Quantizer Max Quantizer Intra Interval Rate Control Mode Quantizer Control Mode Resolution Co
1 1 720 kbps 30 fps 14 24 32 CFR Standard 2CIF H2
2 1 720 kbps 30 fps 14 24 32 CFR Standard 2CIF H2
3 1 720 kbps 30 fps 14 24 32 CFR Standard 2CIF H2
4 1 720 kbps 30 fps 14 24 32 CFR Standard 2CIF H2
5 1 720 kbps 30 fps 14 24 32 CFR Standard 2CIF H2
6 1 720 kbps 30 fps 14 24 32 CFR Standard 2CIF H2
7 1 720 kbps 30 fps 14 24 32 CFR Standard 2CIF H2
8 1 720 kbps 30 fps 14 24 32 CFR Standard 2CIF H2
9 1 720 kbps 30 fps 14 24 32 CFR Standard 2CIF H2
10 1 720 kbps 30 fps 14 24 32 CFR Standard 2CIF H2
11 1 720 kbps 30 fps 14 24 32 CFR Standard 2CIF H2
12 1 720 kbps 30 fps 14 24 32 CFR Standard 2CIF H2
13 1 720 kbps 30 fps 14 24 32 CFR Standard 2CIF H2
14 1 720 kbps 30 fps 14 24 32 CFR Standard 2CIF H2
15 1 720 kbps 30 fps 14 24 32 CFR Standard 2CIF H2
16 1 720 kbps 30 fps 14 24 32 CFR Standard 2CIF H2
1 2 300 kbps 30 fps 14 24 32 CFR Standard CIF H2
2 2 300 kbps 30 fps 14 24 32 CFR Standard CIF H2
Apply
Cancel

3. From the **Video standard** list, select the analog display standard of the region. You can select from the following:
   - **NTSC**
   - **PAL**

NOTE: Changing the video standard requires a reboot. A dialog box appears warning you of the changes to the video standard.

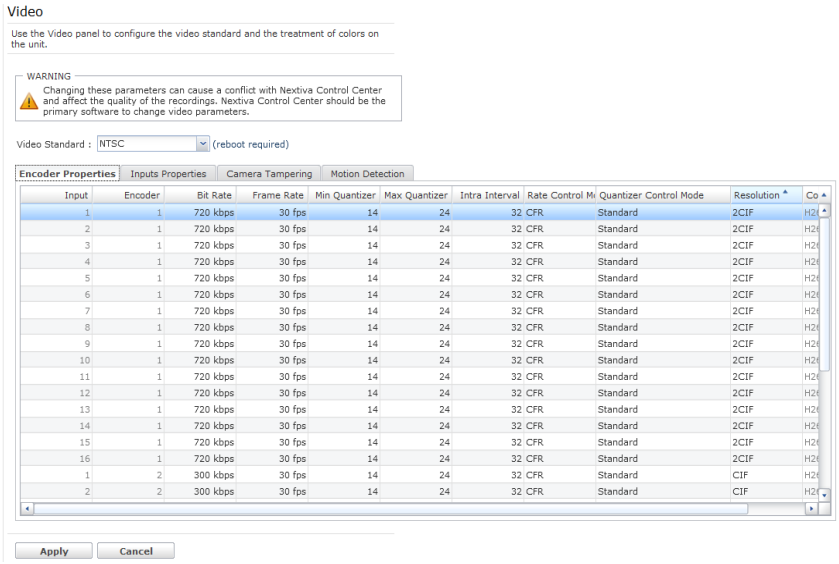
4. Click **Yes** to make the changes.
5. Click **Apply**.
6. Click **OK** to reboot the Edge device.

Configuring the Encoder Properties

For each video input, the S1800e series devices can send video with different sets of parameters to different locations. The single/dual port devices support quad-stream encoding with three streams using H.264 compression and one using MJPEG compression. The multiport devices support triple-stream encoding provides two streams using H.264 compression and one using MPEG4 compression. You can customize each device in terms of frame rate and resolution to meet each system requirements.

► Perform the following steps:

1. Start the Web Interface.
2. From the tree, select **Configuration > Video**.


Video
Use the Video panel to configure the video standard and the treatment of colors on the unit.
WARNING
Changing these parameters can cause a conflict with Nextiva Control Center and affect the quality of the recordings. Nextiva Control Center should be the primary software to change video parameters.
Video Standard : NTSC (reboot required)
Encoder Properties
Inputs Properties
Camera Tampering
Motion Detection
Input
Encoder
Bit Rate
Frame Rate
Min Quantizer
Max Quantizer
Intra Interval
Rate Control Mode
Quantizer Control Mode
Resolution
Apply
Cancel

3. From the **Encoder Properties** tab, set the values for the following parameters:
   - **Bit Rate:** The rate in kbps at which the device sends data. Use a higher bit rate to record movements, noise and details. The bit rate can range from 9 kbps to 6000 kbps.
   - **Frame Rate:** The number of frames captured or recorded each seconds.
     - **NTSC:** select from: 1, 2, 3, 3.75, 5, 6, 7.5, 10, 15, or 30 fps.
     - **PAL:** select from: 1, 2.5, 5, 6.75, 8.33, 12.5, or 25 fps
   - **Quantizer (Minimum and Maximum):** The process of safely discarding information from a video without a significant loss in visual quality. Using a higher quantizer value decreases video quality and creates a smaller file size. Using a low quantizer value increases video quality and creates a larger file size. The available range is between 2 and 31.

NOTE: To maintain the video frame rate, you should set the maximum quantizer to 31. If the quality of each frame is more important, you should reduce the quantizer value; for example, a maximum quantizer of 5 keeps a good image quality, but skips frames when motion is high.

   - **Intra Interval:** The frequency at which a complete video frame (I-frame) is sent by the device. The available values are in the 0 – 1000 range. Zero indicates that no I-frame will be sent automatically by the device.
   - **Rate Control Mode:** The mode controlling the bit rate variation. The available modes are:
     - **Constant Bit Rate (CBR):** This mode is the most effective to maintain the target bit rate. Video quality may suffer (frames may be skipped) and the frame rate may decrease. This mode should be used when transmitting video over networks that have very limited bandwidths, and with an intra interval value of 0 (default).

  - **Constant Frame Rate (CFR):** This mode maintains the target frame rate. Video quality may suffer and the bit rate may exceed the target value.
- **Quantizer Control Mode**:
  - **Standard**:
  - **High on Motion Area**:
- **Resolution:** The total number of lines (width × height) in the video image. The greater the number of lines produces a more detailed, clearer and sharper image, but requires more bandwidth and storage. The following resolutions are available:
  - **CIF:** NTSC (352 × 240) and PAL (352 × 288)
  - **2CIF:** NTSC (704 × 240) and PAL (704 × 288)
  - **4CIF:** NTSC (704 × 480) and PAL (704 × 576)
  - **D1**: NTSC (720 × 486) and PAL (720 × 576)
- **Compression Mode:** This parameter cannot be changed. The compression mode column displays the method of encoding currently being used on the Edge device. For the multiport devices, encoders 1 and 2 are set to H.264 and encoder 3 is set to MPEG4. For the single/dual devices, encoders 1, 2 and 3 are set to H.264 and encoder 4 is set to MJPEG.

  NOTE: For devices running analytics and the S1816e-SP and S1816e-SR models running in single or legacy mode, only two streams are available. In this case, Encoder 1 is set to H.264 and Encoder 2 is set to MPEG4.

4. Click **Apply**.
5. Click **OK**.

Video Profile

Video Profiles define both the quality of the video images and the storage and bandwidth requirements of the video files. All Video Profiles include at least the following settings: frame rate, resolution, and bit rate. For each video input, you can configure the image parameters. With each video input, the S1800e series devices supports up to quad-stream encoding (triple-stream encoding on the multiport devices and quad-stream encoding on the single/dual port devices). Encoding the video inputs provides multiple live-view streams using different sets of parameters providing high or low quality video for analysis and a single recording stream using H.264 video compression providing high quality video at a substantially lower bit rates than previous standards.

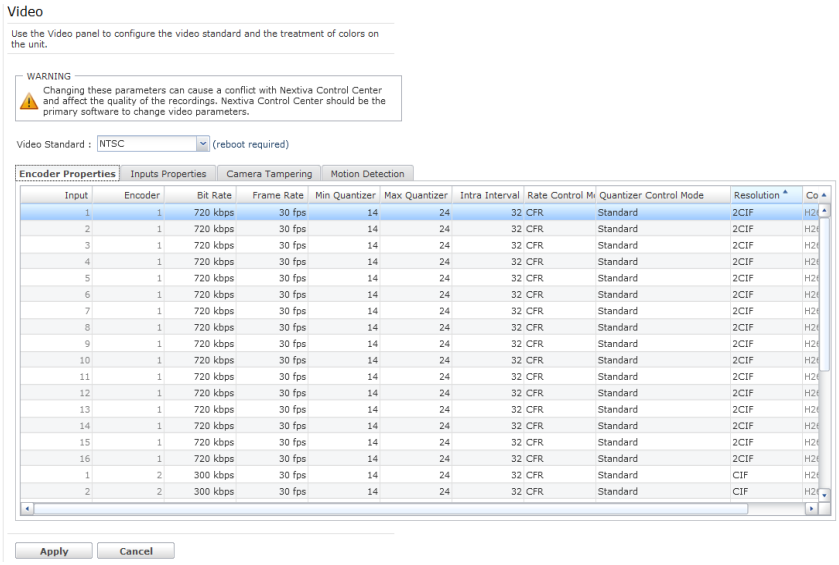
NOTE: Nextiva video management software currently supports a maximum of two streams and provide four video profiles for the S1800e series devices. For more information configuring video profiles, refer to the Nextiva VMS *Administrator Guide*.

Configuring the Encoder Properties

For each video input, the S1800e series devices can send video with different sets of parameters to different locations. The single/dual port devices support quad-stream encoding with three streams using H.264 compression and one using MJPEG compression. The multiport devices support triple-stream encoding provides two streams using H.264 compression and one using MPEG4 compression. You can customize each device in terms of frame rate and resolution to meet each system requirements.

► Perform the following steps:

1. Start the Web Interface.
2. From the tree, select **Configuration > Video**.


Video
Use the Video panel to configure the video standard and the treatment of colors on the unit.
WARNING
Changing these parameters can cause a conflict with Nextiva Control Center and affect the quality of the recordings. Nextiva Control Center should be the primary software to change video parameters.
Video Standard : NTSC (reboot required)
Encoder Properties
Inputs Properties
Camera Tampering
Motion Detection
Input Encoder Bit Rate Frame Rate Min Quantizer Max Quantizer Intra Interval Rate Control Mi Quantizer Control Mode Resolution Co
1 1 720 kbps 30 fps 14 24 32 CFR Standard 2CIF H2
2 1 720 kbps 30 fps 14 24 32 CFR Standard 2CIF H2
3 1 720 kbps 30 fps 14 24 32 CFR Standard 2CIF H2
4 1 720 kbps 30 fps 14 24 32 CFR Standard 2CIF H2
5 1 720 kbps 30 fps 14 24 32 CFR Standard 2CIF H2
6 1 720 kbps 30 fps 14 24 32 CFR Standard 2CIF H2
7 1 720 kbps 30 fps 14 24 32 CFR Standard 2CIF H2
8 1 720 kbps 30 fps 14 24 32 CFR Standard 2CIF H2
9 1 720 kbps 30 fps 14 24 32 CFR Standard 2CIF H2
10 1 720 kbps 30 fps 14 24 32 CFR Standard 2CIF H2
11 1 720 kbps 30 fps 14 24 32 CFR Standard 2CIF H2
12 1 720 kbps 30 fps 14 24 32 CFR Standard 2CIF H2
13 1 720 kbps 30 fps 14 24 32 CFR Standard 2CIF H2
14 1 720 kbps 30 fps 14 24 32 CFR Standard 2CIF H2
15 1 720 kbps 30 fps 14 24 32 CFR Standard 2CIF H2
16 1 720 kbps 30 fps 14 24 32 CFR Standard 2CIF H2
1 2 300 kbps 30 fps 14 24 32 CFR Standard CIF H2
2 2 300 kbps 30 fps 14 24 32 CFR Standard CIF H2
Apply
Cancel

3. From the **Encoder Properties** tab, set the values for the following parameters:
   - **Bit Rate:** The rate in kbps at which the device sends data. Use a higher bit rate to record movements, noise and details. The bit rate can range from 9 kbps to 6000 kbps.
   - **Frame Rate:** The number of frames captured or recorded each seconds.
     - **NTSC:** select from: 1, 2, 3, 3.75, 5, 6, 7.5, 10, 15, or 30 fps.
     - **PAL:** select from: 1, 2.5, 5, 6.75, 8.33, 12.5, or 25 fps
   - **Quantizer (Minimum and Maximum):** The process of safely discarding information from a video without a significant loss in visual quality. Using a higher quantizer value decreases video quality and creates a smaller file size. Using a low quantizer value increases video quality and creates a larger file size. The available range is between 2 and 31.

NOTE: To maintain the video frame rate, you should set the maximum quantizer to 31. If the quality of each frame is more important, you should reduce the quantizer value; for example, a maximum quantizer of 5 keeps a good image quality, but skips frames when motion is high.

- **Intra Interval:** The frequency at which a complete video frame (I-frame) is sent by the device. The available values are in the 0 – 1000 range. Zero indicates that no I-frame will be sent automatically by the device.
- **Rate Control Mode:** The mode controlling the bit rate variation. The available modes are:
  - **Constant Bit Rate (CBR):** This mode is the most effective to maintain the target bit rate. Video quality may suffer (frames may be skipped) and the frame rate may decrease. This mode should be used when transmitting video over networks that have very limited bandwidths, and with an intra interval value of 0 (default).
  - **Constant Frame Rate (CFR):** This mode maintains the target frame rate. Video quality may suffer and the bit rate may exceed the target value.
- **Quantizer Control Mode**:
  - **Standard**:
  - **High on Motion Area**:
- **Resolution:** The total number of lines (width × height) in the video image. The greater the number of lines produces a more detailed, clearer and sharper image, but requires more bandwidth and storage. The following resolutions are available:
  - **CIF:** NTSC (352 × 240) and PAL (352 × 288)
  - **2CIF:** NTSC (704 × 240) and PAL (704 × 288)
  - **4CIF:** NTSC (704 × 480) and PAL (704 × 576)
  - **D1**: NTSC (720 × 486) and PAL (720 × 576)
- **Compression Mode:** This parameter cannot be changed. The compression mode column displays the method of encoding currently being used on the Edge device. For the multiport devices, encoders 1 and 2 are set to H.264 and encoder 3 is set to MPEG4. For the single/dual devices, encoders 1, 2 and 3 are set to H.264 and encoder 4 is set to MJPEG.

  NOTE: For devices running analytics and the S1816e-SP and S1816e-SR models running in single or legacy mode, only two streams are available. In this case, Encoder 1 is set to H.264 and Encoder 2 is set to MPEG4.

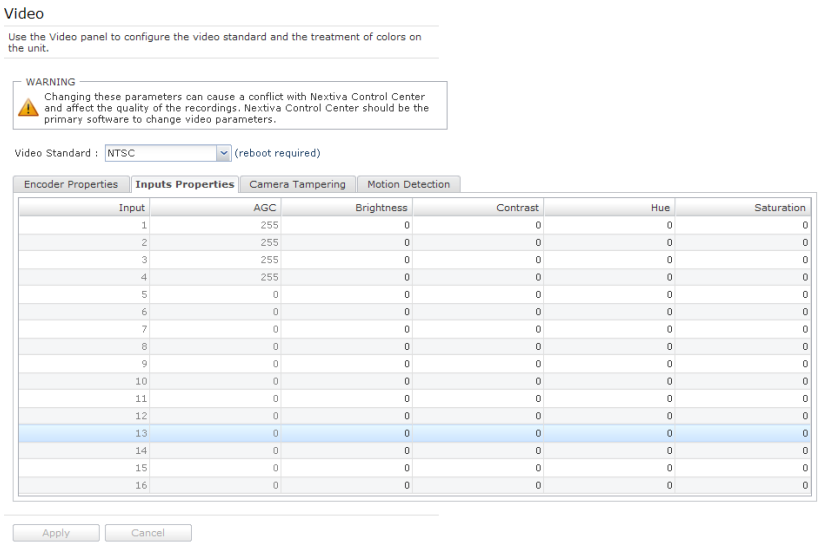
4. Click **Apply**.
5. Click **OK**.

Configuring the Input Properties

The number of video inputs varies depending on the device. For each video input, you can enhance the video image by adjusting the value of brightness, contrast, hue and saturation.

► Perform the following steps:

1. Start the Web Interface.
2. From the tree, select **Configuration > Video**.


Video
Use the Video panel to configure the video standard and the treatment of colors on the unit.
WARNING
Changing these parameters can cause a conflict with Nextiva Control Center and affect the quality of the recordings. Nextiva Control Center should be the primary software to change video parameters.
Video Standard : NTSC (reboot required)
Encoder Properties
Inputs Properties
Camera Tampering
Motion Detection
Input AGC Brightness Contrast Hue Saturation
1 255 0 0 0 0
2 255 0 0 0 0
3 255 0 0 0 0
4 255 0 0 0 0
5 0 0 0 0 0
6 0 0 0 0 0
7 0 0 0 0 0
8 0 0 0 0 0
9 0 0 0 0 0
10 0 0 0 0 0
11 0 0 0 0 0
12 0 0 0 0 0
13 0 0 0 0 0
14 0 0 0 0 0
15 0 0 0 0 0
16 0 0 0 0 0
Apply
Cancel

3. From the **Input Properties** tab, you can set the values for the following for each video input:
   - **AGC:** (Automatic Gain Control) This parameter cannot be changed. Automatic gain control (AGC) bring the video signal up to the standard 1Vpp required level to produce quality picture.
   - **Brightness:** Changing the brightness level allows you to increase or decrease highlights and shadows, making them darker or lighter. The values range from -128 to 127.
   - **Contrast:** This refers to the difference between the lightest and darkest parts of the image. The values range from -128 to 127
   - **Hue:** This refers to the color classification given to the image based on the colors found in the color spectrum. The values range from -128 to 127.
   - **Saturation:** This refers to the intensity of the colors in the image. The values range from -128 to 127.
4. Click **Apply**.

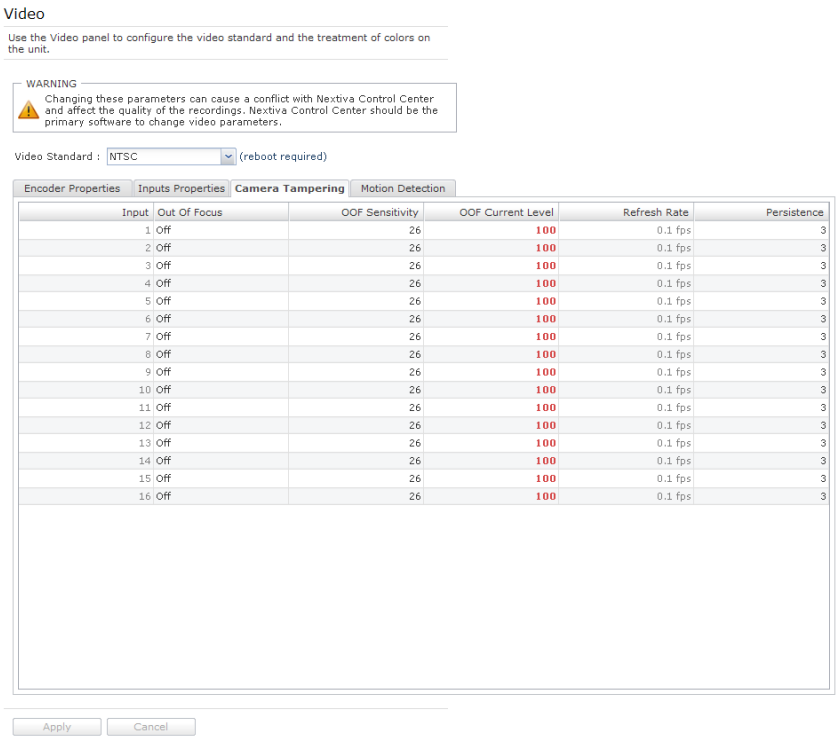
Configuring the Camera Tampering Properties

The camera tampering feature is a real-time automated feature that generates an alarm whenever the camera is repositioned or out of focus.

NOTE: If you plan on using Nextiva VMS with the single/dual port encoders, you cannot set an area of interest as described in the Nextiva Administrator Guide.

► Perform the following steps:

1. Start the Web Interface.
2. From the tree, select **Configuration > Video**.


Video
Use the Video panel to configure the video standard and the treatment of colors on the unit.
WARNING
Changing these parameters can cause a conflict with Nextiva Control Center and affect the quality of the recordings. Nextiva Control Center should be the primary software to change video parameters.
Video Standard : NTSC (reboot required)
Encoder Properties
Inputs Properties
Camera Tampering
Motion Detection
Input | Out Of Focus | OOF Sensitivity | OOF Current Level | Refresh Rate | Persistence
1 Off 26 100 0.1 fps 3
2 Off 26 100 0.1 fps 3
3 Off 26 100 0.1 fps 3
4 Off 26 100 0.1 fps 3
5 Off 26 100 0.1 fps 3
6 Off 26 100 0.1 fps 3
7 Off 26 100 0.1 fps 3
8 Off 26 100 0.1 fps 3
9 Off 26 100 0.1 fps 3
10 Off 26 100 0.1 fps 3
11 Off 26 100 0.1 fps 3
12 Off 26 100 0.1 fps 3
13 Off 26 100 0.1 fps 3
14 Off 26 100 0.1 fps 3
15 Off 26 100 0.1 fps 3
16 Off 26 100 0.1 fps 3
Apply
Cancel

3. From the **Camera Tampering** tab, you can set the values of the following parameters for each video input:
   - **Out of Focus:** Enable or disable the Out of Focus feature.
   - **OOF Sensitivity:** Set the sensitivity level from 1 (most sensitive) to 100 (no sensitive).
   - **Refresh Rate:** Set the refresh rate in frames per seconds.
   - **Persistence:** The number of analyzed frames that must be detected as tampered to trigger an alarm. The values range from 1 to 1000. Increasing the persistence level can reduce the number of false alarms.
4. Click **Apply**.

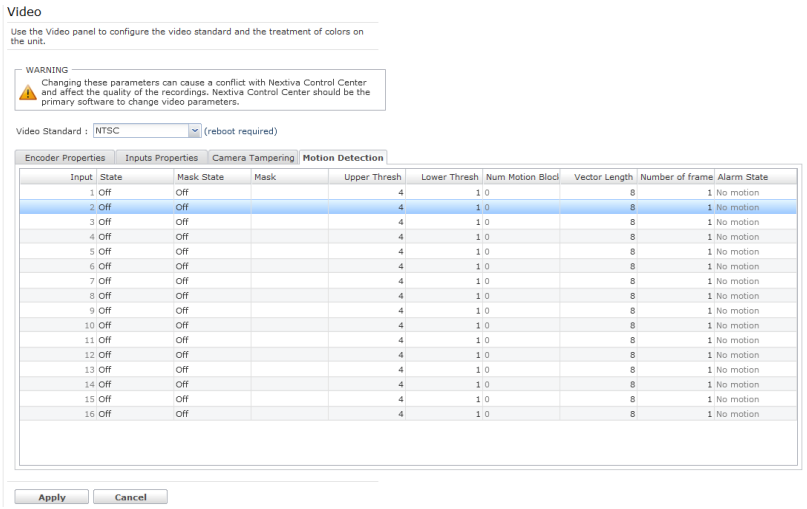
Configuring the Motion Detection Properties

The S1800e encoders support motion detection on each video input. For each video input, you can configure the motion detection settings by adjusting the values for each input.

CAUTION: You must have a good understanding of video technology to use these settings. If you are unsure do not modify these settings.

► Perform the following steps:

1. Start the Web Interface.
2. From the tree, select **Configuration > Video**.


Video
Use the Video panel to configure the video standard and the treatment of colors on the unit.
WARNING
Changing these parameters can cause a conflict with Nextiva Control Center and affect the quality of the recordings. Nextiva Control Center should be the primary software to change video parameters.
Video Standard : NTSC (reboot required)
Encoder Properties
Inputs Properties
Camera Tampering
Motion Detection
Input State Mask State Mask Upper Thresh Lower Thresh Num Motion Block Vector Length Number of frame Alarm State
1 Off Off 4 1 0 8 1 No motion
2 Off Off 4 1 0 8 1 No motion
3 Off Off 4 1 0 8 1 No motion
4 Off Off 4 1 0 8 1 No motion
5 Off Off 4 1 0 8 1 No motion
6 Off Off 4 1 0 8 1 No motion
7 Off Off 4 1 0 8 1 No motion
8 Off Off 4 1 0 8 1 No motion
9 Off Off 4 1 0 8 1 No motion
10 Off Off 4 1 0 8 1 No motion
11 Off Off 4 1 0 8 1 No motion
12 Off Off 4 1 0 8 1 No motion
13 Off Off 4 1 0 8 1 No motion
14 Off Off 4 1 0 8 1 No motion
15 Off Off 4 1 0 8 1 No motion
16 Off Off 4 1 0 8 1 No motion
Apply
Cancel

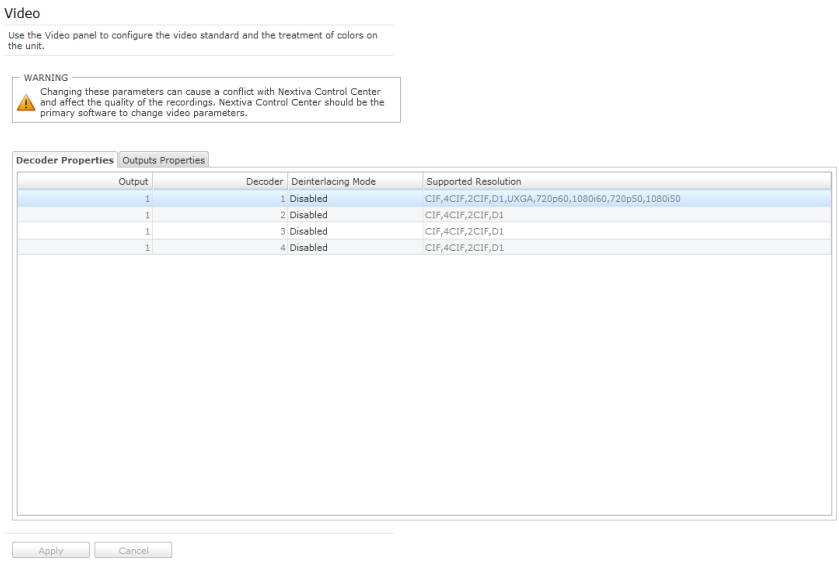
3. From the **Motion Detection** tab, you can set the values of the following parameters for each video input:
   - **State**: Enable or disable motion detection on the video input.
   - **Mask State:** Enable or disable the use of the mask for motion detection. If disabled, all macroblocks in the frame are checked for motion.
   - **Mask:** Type the numerical string to specify which macroblocks that will be analyzed for motion. An empty string indicates that all macroblocks in the frame is checked.
   - **Upper Thresh:** The minimum number of macroblocks with motion in a frame to start an alert. This value must be greater than or equal to Lower Thresh. The values range from 1 to 1320 (NTSC) or 1 to 1548 (PAL).
   - **Lower Thresh:** The maximum number of macroblocks with motion in a frame to stop an alert. This value must be less than or equal to Upper Thresh. The values range from 1 to 1320 (NTSC) or 1 to 1548 (PAL).
   - **Vector Length:** The amount of motion in a given macroblocks that must be present to tag this as in motion. The values range from 0 to 255.
   - **Number of Frames:** The number of consecutive frames that must be detected as a new motion. The values range from 1 to 1000.
4. Click **Apply**.

Configuring the Decoder Properties

The S1800e series compact decoders support four to six H.264 video streams, displaying up to four tiles on traditional CCTV monitors and up to six tiles on high-definition LCD or plasma monitors.

► Perform the following steps:

1. Start the Web Interface.
2. From the tree, select **Configuration > Video**.


Video
Use the Video panel to configure the video standard and the treatment of colors on the unit.
WARNING
Changing these parameters can cause a conflict with Nextiva Control Center and affect the quality of the recordings. Nextiva Control Center should be the primary software to change video parameters.
Decoder Properties
Outputs Properties
Output
Decoder
Deinterlacing Mode
Supported Resolution
1 1 Disabled CIF,4CIF,2CIF,D1,UXGA,720p60,1080i60,720p50,1080i50
1 2 Disabled CIF,4CIF,2CIF,D1
1 3 Disabled CIF,4CIF,2CIF,D1
1 4 Disabled CIF,4CIF,2CIF,D1
Apply
Cancel

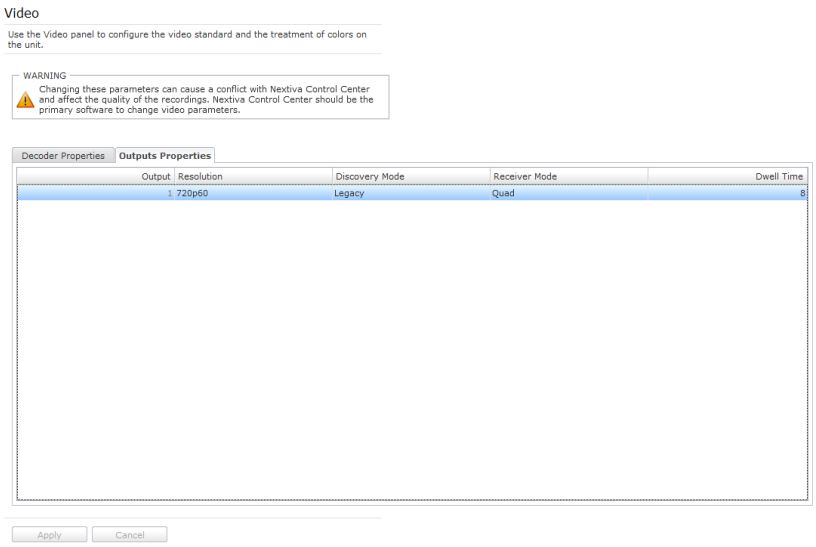
3. From the **Decoder Properties** tab, set the values for the following parameters for each output:
   - **Deinterlacing Mode**: Deinterlacing is the process taking a stream of interlaced frames and converting it to a stream of progressive frames. Select one of the following:
     - Enabled
     - Disabled
4. Click **Apply**.

Configuring the Video Output Properties

The S1800e decoders support four to six H.264 video streams, displaying up to four tiles on traditional CCTV monitors and up to six tiles on high-definition LCD or plasma monitors.

► Perform the following steps:

1. Start the Web Interface.
2. From the tree, select **Configuration > Video**.


Video
Use the Video panel to configure the video standard and the treatment of colors on the unit.
WARNING
Changing these parameters can cause a conflict with Nextiva Control Center and affect the quality of the recordings. Nextiva Control Center should be the primary software to change video parameters.
Decoder Properties
Outputs Properties
Output
Resolution
Discovery Mode
Receiver Mode
Dwell Time
1 720p60
Legacy
Quad
8
Apply
Cancel

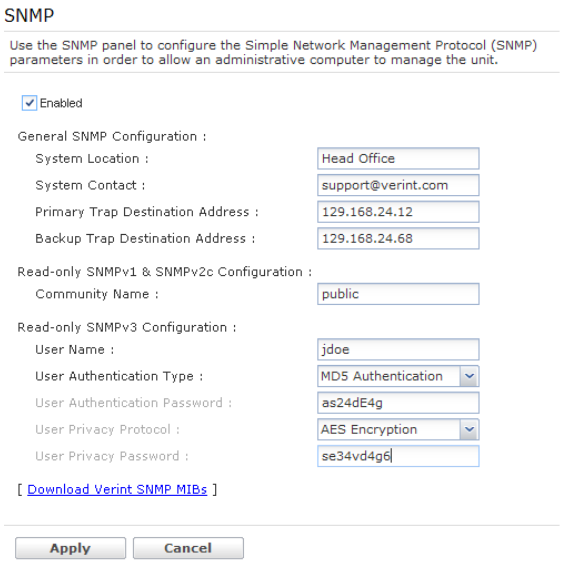
3. From the **Output Properties** tab, set the output values.
   - (Only on HDMI model) **Resolution**: The number of pixels that you can display on the monitor. Select from the following:
     - 1080i60
     - 1080i50
     - 720p60
     - 720p50
     - 480p60
     - 576p50
     - 640 × 480p60
   - **Discovery Mode**: How the unit is represented through VSIP. Select from the following:
     - **Normal**: 1 physical output, 4 decoders
     - **Legacy**: 4 physical outputs, 1 decoder per output
   - **Receiver Mode**: The number of tiles to display on the monitor. Select from the following:
   - **Single**: Video from one stream is displayed on the monitor.
   - **Quad**: The monitor is divided into four quadrants and each displaying video from four different streams.
   - **3 × 2**: (Only on HDMI model) The monitor displays video from six different streams.
   - **Guard Tour**: Video from each stream is displayed on the monitor one after another.
   - **Dwell Time**: The number of seconds to display video from a selected camera before switching to the next camera in the tour.
4. Click **Apply**.

Setting the SNMP Properties

Simple Network Management Protocol (SNMP) is a protocol used by network management systems to manage network equipments from a central location. The S1800e devices are SNMP-compliant and store data about themselves in Management Information Bases (MIBs) and return this data (SNMP Traps) to the SNMP requesters.

► Perform the following steps:

1. Start the Web Interface.
2. From the tree, select **Configuration > SNMP**.


SNMP
Use the SNMP panel to configure the Simple Network Management Protocol (SNMP) parameters in order to allow an administrative computer to manage the unit.
Enabled
General SNMP Configuration :
System Location : Head Office
System Contact : support@verint.com
Primary Trap Destination Address : 129.168.24.12
Backup Trap Destination Address : 129.168.24.68
Read-only SNMPv1 & SNMPv2c Configuration :
Community Name : public
Read-only SNMPv3 Configuration :
User Name : jdoe
User Authentication Type : MD5 Authentication
User Authentication Password : as24dE4g
User Privacy Protocol : AES Encryption
User Privacy Password : se34vd4g6
[Download Verint SNMP MIBs]
Apply
Cancel

3. In the **SNMP** panel, select the **Enabled** check box enable the SNMP service.
4. In the **System Location** box, type the location for the Edge device.
5. In the **System Contact** box, type the e-mail address of the network administrator.
6. In the **Primary Trap Destination Address** box, type the IP address of the primary server that will receive the SNMP Traps.
7. In the **Backup Trap Destination Address** box, type the IP address of the backup server that will receive the SNMP Traps in case the primary server is unavailable.
8. In the **Community Name** box, type the name of the group where you want the edge device to be a member.

NOTE: The Edge device will only respond to requests from management servers that belong to the same community.

9. In the **User Name** box, type the name of the SNMP user.
10. In the **User Authentication Type** list, select the authentication algorithm for SNMP requests. You can select from the following:

- **No Authentication:** No authentication is used.
- **MD5 Authentication:** The Message Digest Version 5 (MD5) hash function is used to determine that the message is from a valid source.
- **SHA Authentication:** The Secure Hash Algorithm (SHA) has function is used to determine that the message is from a valid source.

11. In the **User Authentication Password** box, type a password for the user.
12. In the **User Privacy Protocol** list, select the privacy protocol to encrypt the contents of the data. You can select from the following:
    - **No Encryption:** No encryption is used.
    - **DES Encryption:** The Data Encryption Standard (DES) algorithm is used to encrypt the data.
    - **AES Encryption:** The Advanced Encryption Standard (AES) algorithm is used to encrypt the data.
13. In the **User Privacy Password** box, type a password for the privacy protocol.
14. Click **Apply**.

Viewing MIB Information

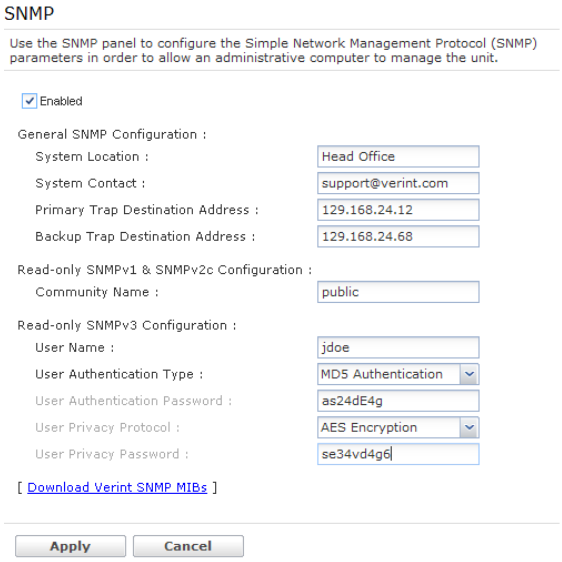
You can download the device Management Information Base (MIB) and use a SNMP application to view the information. The MIB is a collection of manageable entities of the device network element.

The S1800e series device sends a coldStart trap when it is initialized and sends the following Verint-Specific SNMP traps:

- Video Signal Loss edVinMediaStateAnalogNotif trap. This trap is generated if an analog video input of an S1800e series device is disconnected or reconnected with the following information:
  - Input number (1 to 16 for S1816e and S1816e-SP, 1 to 8 for S1808e)
  - New state (0: not connected, 1: connected)
- Dry Input State Change edDigitalinPinStateNotif trap. This trap is generated if the status of a digital alarm dry contact input of the S1800e device has changed with the following information:
  - Input number (1 to 16 for S1816e and S1816e-SP, 1 to 8 for S1808e)
  - New state (0: not connected, 1: connected)
- edVinCamtampOofAlarmStateNotif trap. This trap is generated if the Out Of Focus status of an input has changed with the following information:
  - [0x00]= Not Out Of Focus
  - [0x01]= Out Of Focus

► Perform the following steps:

1. Start the Web Interface.
2. From the tree, select **Configuration > SNMP**.


SNMP
Use the SNMP panel to configure the Simple Network Management Protocol (SNMP) parameters in order to allow an administrative computer to manage the unit.
Enabled
General SNMP Configuration :
System Location : Head Office
System Contact : support@verint.com
Primary Trap Destination Address : 129.168.24.12
Backup Trap Destination Address : 129.168.24.68
Read-only SNMPv1 & SNMPv2c Configuration :
Community Name : public
Read-only SNMPv3 Configuration :
User Name : jdoe
User Authentication Type : MD5 Authentication
User Authentication Password : as24dE4g
User Privacy Protocol : AES Encryption
User Privacy Password : se34vd4g6
[Download Verint SNMP MIBs]
Apply
Cancel

3. Click **Download Verint SNMP MIBs**.

Audio Properties

The S1801e, S1802e, S1808e-A and S1816e-A supports bi-directional audio: audio input and output. Audio input allows you to capture audio signals from a camera, provided that it supports audio, at the same time it captures video.

Currently, the S1800e series devices support the following audio formats:

Codec	Sampling Frequency	Bits per Sample	Bitrate
PCM (no compression)	8 kHz	16bits/data	28 kbits/sec (8kHz)
G.711/μ-Law (8 bits)	8 kHz	14 bits signed/data	64 kbits/sec

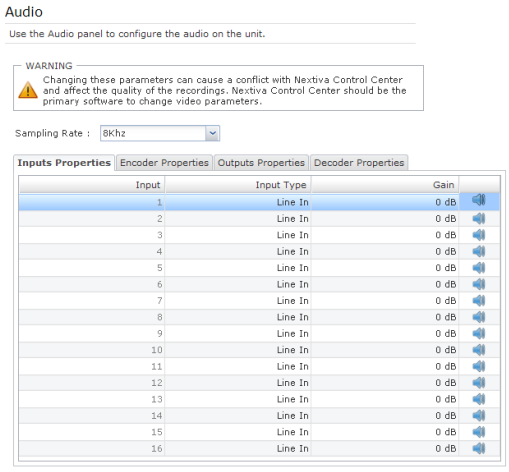
NOTE: The S1816e-SP and S1816e-SR models do not support audio.

Setting the Audio Sampling Rate

Expressed in hertz (Hz), sampling rate is the rate at which samples of an analog signal are taken in order to be converted into digital form. The device uses 8 kHz.

► Perform the following steps:

1. Start the Web Interface.
2. From the tree, select **Configuration > Audio**.


Audio
Use the Audio panel to configure the audio on the unit.
WARNING
Changing these parameters can cause a conflict with Nextiva Control Center and affect the quality of the recordings. Nextiva Control Center should be the primary software to change video parameters.
Sampling Rate : 8Khz
Inputs Properties
Encoder Properties
Outputs Properties
Decoder Properties
Input
Input Type
Gain
1 Line In 0 dB
2 Line In 0 dB
3 Line In 0 dB
4 Line In 0 dB
5 Line In 0 dB
6 Line In 0 dB
7 Line In 0 dB
8 Line In 0 dB
9 Line In 0 dB
10 Line In 0 dB
11 Line In 0 dB
12 Line In 0 dB
13 Line In 0 dB
14 Line In 0 dB
15 Line In 0 dB
16 Line In 0 dB

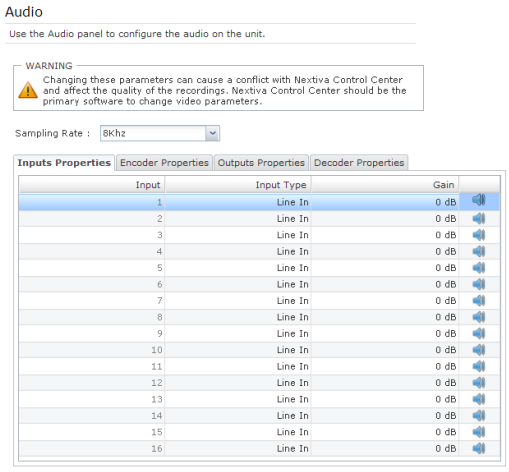
3. From the **Sampling Rate** list, select 8 kHz.
4. Click **Apply**.

Setting the Audio Input Properties

The S1801e, S1802e, S1808e-A and S1816e-A supports bi-directional audio: audio input and output. The audio input properties allow you to select where to capture audio signals from and to set the bias to reduce distortion in the recording.

► Perform the following steps:

1. Start the Web Interface.
2. From the tree, select **Configuration > Audio**.


Audio
Use the Audio panel to configure the audio on the unit.
WARNING
Changing these parameters can cause a conflict with Nextiva Control Center and affect the quality of the recordings. Nextiva Control Center should be the primary software to change video parameters.
Sampling Rate : 8Khz
Inputs Properties
Encoder Properties
Outputs Properties
Decoder Properties
Input
Input Type
Gain
1 Line In 0 dB
2 Line In 0 dB
3 Line In 0 dB
4 Line In 0 dB
5 Line In 0 dB
6 Line In 0 dB
7 Line In 0 dB
8 Line In 0 dB
9 Line In 0 dB
10 Line In 0 dB
11 Line In 0 dB
12 Line In 0 dB
13 Line In 0 dB
14 Line In 0 dB
15 Line In 0 dB
16 Line In 0 dB

3. Select the **Input Properties** tab.

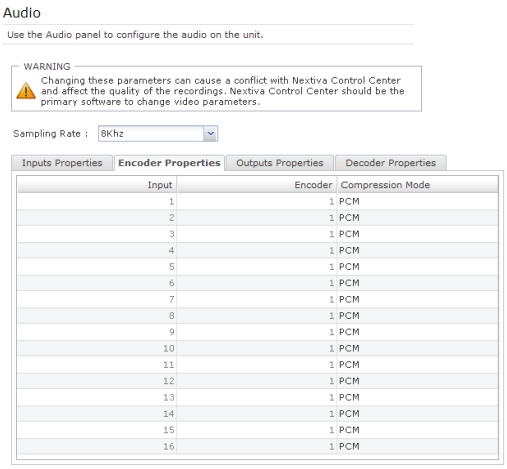
4. Set the values for each input:
   - **Input Type**: Select the audio source:
     - **Line In**
     - **Mic In**
   - **Bias**: Select from the following:
     - 2.0 V
     - 2.5 V
     - 3.0 V
   - **Gain**: Type a value from -12 to 59 to set the amplitude of the signal from the input.
5. Click the speaker icon to mute audio from the input.
6. Click **Apply**.

Setting the Audio Encoder Properties

The S1801e, S1802e, S1808e-A and S1816e-A supports bi-directional audio: audio input and output. Audio input allows you to capture audio signals from a camera, provided that it supports audio, at the same time it captures video.

► Perform the following steps:

1. Start the Web Interface.
2. From the tree, select **Configuration > Audio**.



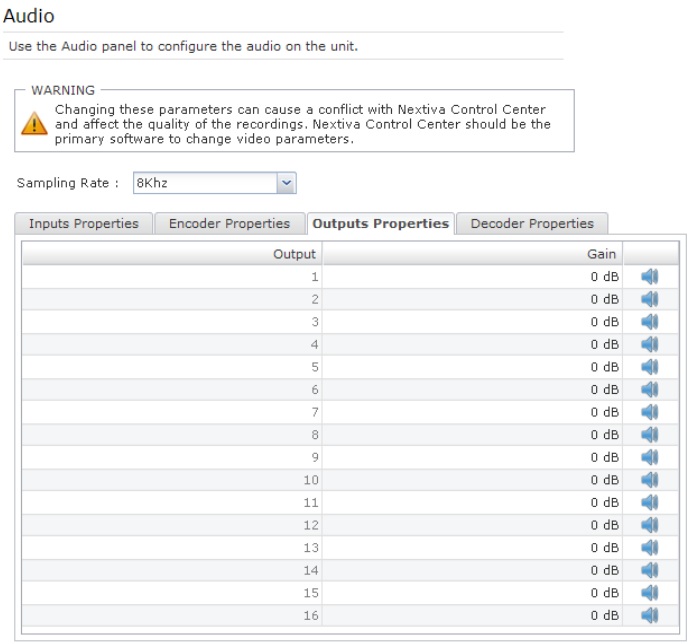
3. Select the **Encoder Properties** tab.
4. From the **Compression Mode** list, select one of the following:
   - PCM
   - µ-LAW
5. Click **Apply**.

Setting the Audio Output Properties

The S1801e, S1802e, S1808e-A and S1816e-A supports bi-directional audio: audio input and output. The audio output properties allow you to set the Gain to increase the amplitude of the input signal.

► Perform the following steps:

1. Start the Web Interface.
2. From the tree, select **Configuration > Audio**.



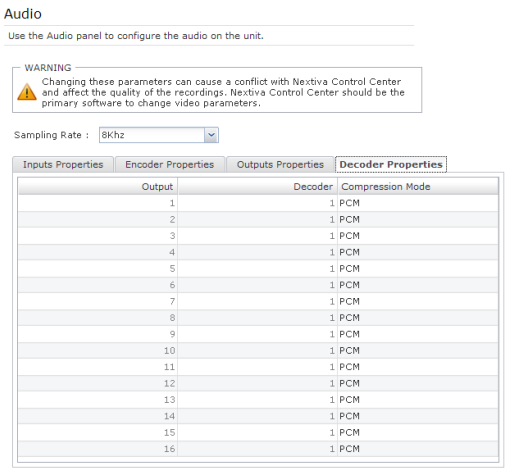
3. Select the **Output Properties** tab.
4. From the **Gain** box, type a value from -12 to 59 to set the amplitude of the signal from the input to the output.
5. Click the speaker icon to mute audio for the output.
6. Click **Apply**.

Setting the Audio Decoder Properties

The S1801e, S1802e, S1808e-A and S1816e-A supports bi-directional audio: audio input and output. Audio output allows you to capture audio signals from a camera, provided that it supports audio, at the same time it captures video.

► Perform the following steps:

1. Start the Web Interface.
2. From the tree, select **Configuration > Audio**.



3. Select the **Decoder Properties** tab.
4. From the **Compression Mode** list, select one of the following:
   - PCM
   - µ-LAW
5. Click **Apply**.

Activating Nextiva Onboard Analytics

Nextiva Onboard Analytics is a licensed feature available on the multiport S1800e series encoders (S1808e, S1808e-A, S1816e and S1816e-A)and supports up to four video inputs (1, 2, 5, and 6 on the S1808e and S1808e-A) and (1, 2, 9, and 10 on the S1816e and S1816e-A).

NOTE: Nextiva Onboard Analytics is not available on the S1816e-SP and S1816e-SR models.

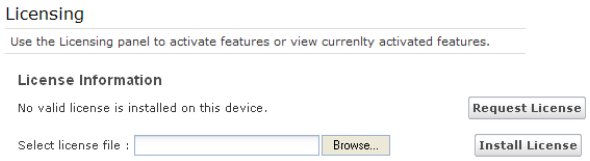
Contact your Verint sales representative on obtaining a license.

CAUTION: Once you activate Nextiva Onboard Analytics for a single input, MPEG-4 compression mode is disabled for the whole device.

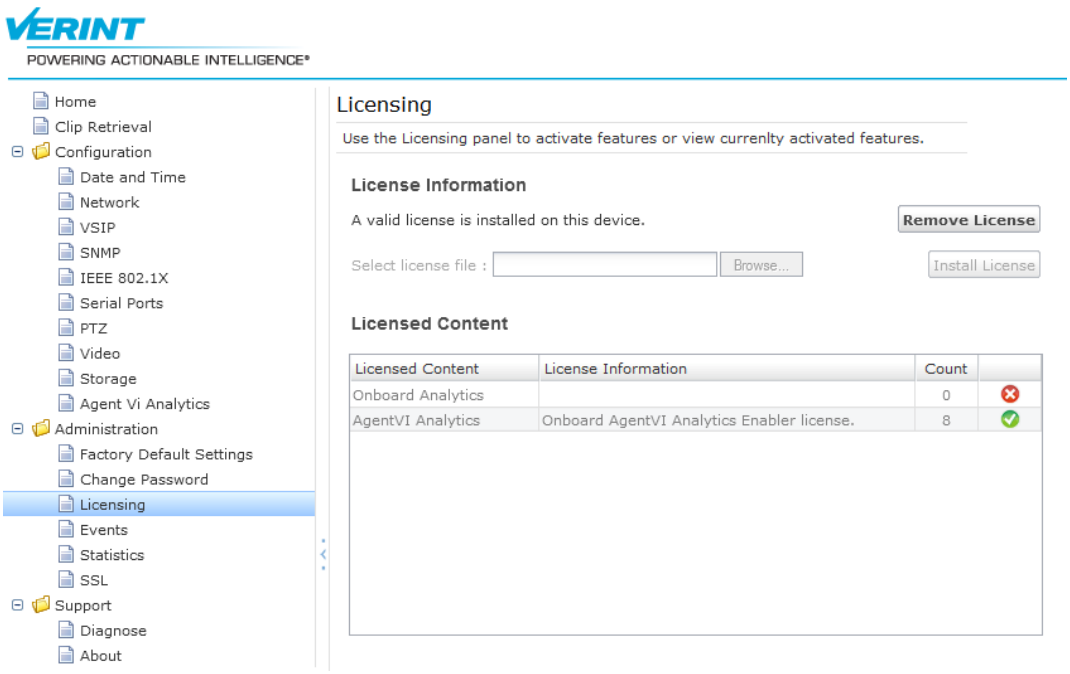
Verint recommends that you activate the Nextiva Onboard Analytics license prior to adding the multiport S1800e series encoder to Nextiva VMS. If the multiport S1800e series encoder is already added to Nextiva VMS, you must manually remove all instances of MPEG-4 compression mode for the recording and the live.

► Perform the following steps:

1. Start the Web Interface.
2. From the tree, select **Administration > Licensing**.


Licensing
Use the Licensing panel to activate features or view currenlty activated features.
License Information
No valid license is installed on this device.
Request License
Select license file :
Browse...
Install License

3. Click **Browse** and select the license key file.
4. Click **Install License**.



5. Click **Apply** to reboot.

Once activated, you can view and select Onboard Analytics from the Hierarchy Tree. For complete information on using Nextiva Onboard Analytics, refer to the Nextiva Onboard Analytics Help and User Guide.

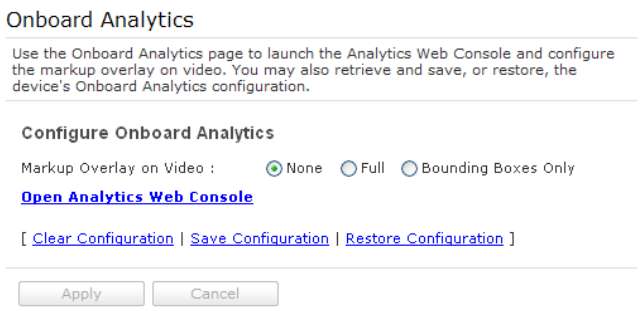
Configuring Nextiva Onboard Analytics

Once activated, you can use Nextiva Onboard Analytics on the four video inputs (1, 2, 5, and 6 on the S1808e) and (1, 2, 9, and 10 on the S1816e).

NOTE: Nextiva Onboard Analytics is not available on the S1816e-SP and S1816e-SR models.

► Perform the following steps:

1. Start the Web Interface.
2. From the tree, select **Configuration > Onboard Analytics**.


Onboard Analytics
Use the Onboard Analytics page to launch the Analytics Web Console and configure the markup overlay on video. You may also retrieve and save, or restore, the device's Onboard Analytics configuration.
Configure Onboard Analytics
Markup Overlay on Video :
None
Full
Bounding Boxes Only
Open Analytics Web Console
[Clear Configuration | Save Configuration | Restore Configuration]
Apply
Cancel

3. Select the type of overlay you want to display on the video. You can select from:
   - None: No information is displayed on the video.
   - Full: In addition to Bounding boxes, displays additional information in the upper left corner. This includes:
     - The number of tracked targets
     - The number of occurred events
     - The number of rules
     - View Status
     - UTC time
   - Bounding Boxes only: Displays color-coded rectangles around objects being tracked. The following three colors are used:
     - Magenta to track People
     - Green to track Vehicles
     - Red to track objects that have triggered an alarm.
4. Click **Open Analytics Web Console** to configure Nextiva Onboard Analytics. For more information using Nextiva Onboard Analytics, use the help.
5. Click **Save Configuration** to save the changes. You can always click **Clear configuration** to reset Nextiva Onboard Analytics or **Restore Configuration** if you have to revert back to the saved configuration.
6. Click **Apply** to reboot the Edge device.

Activating Agent Vi Video Analytics

Agent Vi-System™ is an alternative to the Nextiva Onboard Analytics functionality already available on the multiport S1800e series encoders. The S1808e, S1808e-A, S1816e and S1816e-A encoders are compatible with Agent Vi's real-time video analytics software. A multiport encoder that is Agent Vi ready is able to process some rules that are configured in Agent Vi-System.

NOTE: Agent Vi is not available on the S1816e-SP and S1816e-SR models.

Activating Agent Vi Video Analytics

A Verint license is required t make the multiport encoders Agent Vi ready and enable eight video inputs to work with Agent Vi-System. The following lists the supported video inputs on the multiport encoders.

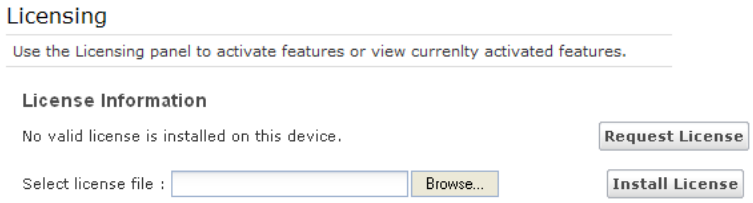
- S1808e and S1808e-A: Inputs 1 to 8
- S1816e and S1816e-A: Inputs 1, 2, 3, 4, 9, 10, 11 and 12

The Verint license is a generic key that can be used on all multiport encoders that need to be Agent Vi ready. For more information about obtaining the Verint license, contact Verint support or your Verint sales representative.

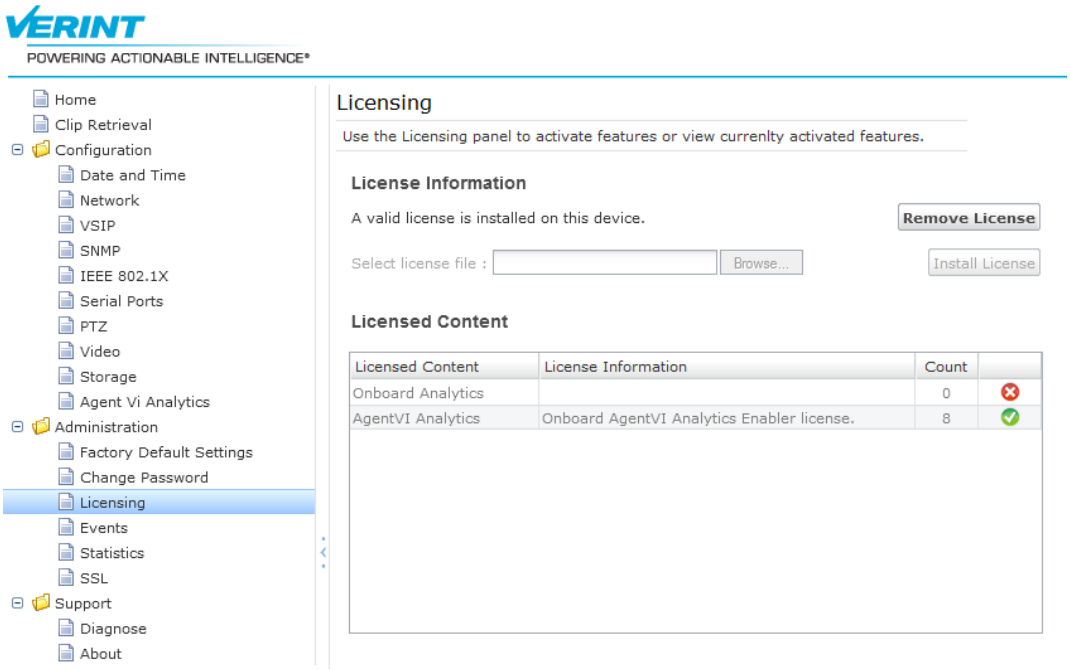
NOTE: Vi-System is separate analytics software by Agent Vi. In order for the multiport encoder to work with Vi-System, you must purchase the Vi-System software and license from Agent Vi. For more information about Agent Vi-System, visit the Agent Vi web page: http://www.agentvi.com.

► Perform the following steps:

1. Start the Web Interface.
2. From the tree, select **Administration > Licensing**.


Licensing
Use the Licensing panel to activate features or view currenlty activated features.
License Information
No valid license is installed on this device.
Request License
Select license file :
Browse...
Install License

3. Click **Browse** and select the license key file.
4. Click **Install License**.



5. Click **Apply** to reboot the Edge device.

Once enabled, you can view Agent Vi Analytics from the Hierarchy Tree. For complete information on using Agent Vi Analytics, refer to the Agent Vi Analytics documentation suite.

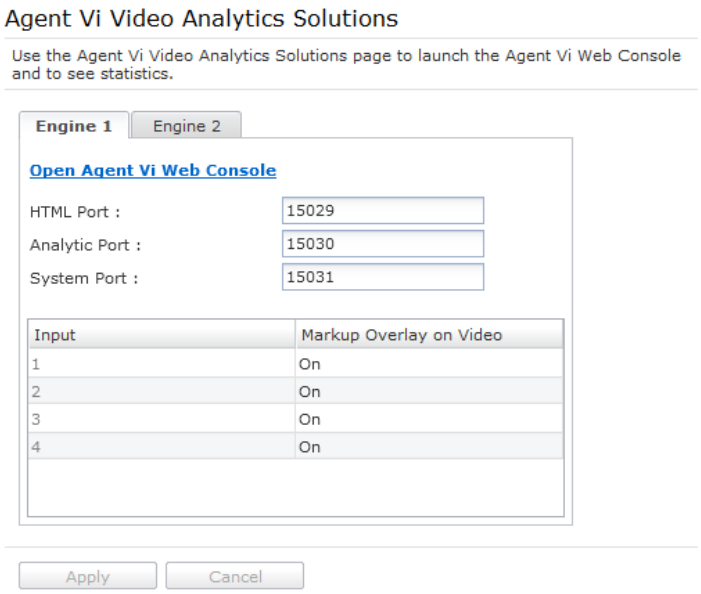
Configuring Agent Vi Video Analytics

Once activated, you can configure Agent Vi Video Analytics on eight video inputs and enable or disable the overlay markup. For complete information on using Agent Vi Analytics, refer to the Agent Vi Analytics documentation suite.

NOTE: Agent Vi is not available on the S1816e-SP and S1816e-SR models.

► Perform the following steps:

1. Start the Web Interface.
2. From the tree, select **Configuration > AgentVI Analytics**.



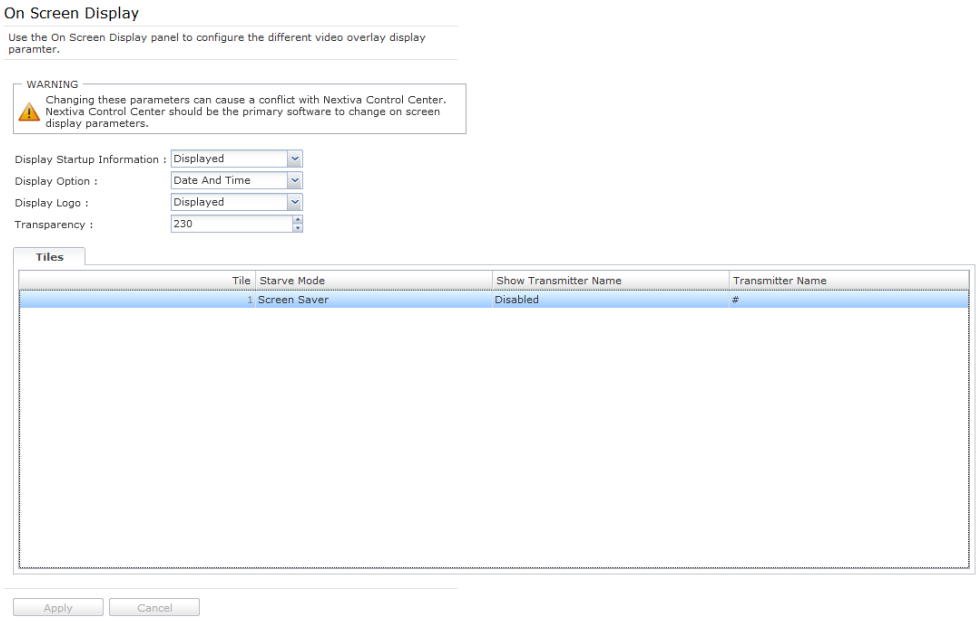
3. Select the **Engine 1** tab.
4. Keep the following default port numbers:
   - HTML Port: 15029 for Engine 1 and 25029 for Engine 2
   - Analytic Port: 15030 for Engine 1 and 25030 for Engine 2
   - System Port: 15031 for Engine 1 and 25031 for Engine 2
5. For inputs 1 to 4 select **On** or **Off** to display a markup overlay on the video.
6. Repeat *Configuring Agent Vi Video Analytics*for inputs 5 to 8 in the **Engine 2** tab.
7. Click **Open Agent Vi Web Console** to view information about Agent VI uptime and analytics performance.
8. Click **Apply** to reboot the Edge device.

Setting the On-Screen Display for the Decoders

On the S1801e-R and S1801e-R-HD, you can configure the information that is displayed on the external monitor about the video.

► Perform the following steps:

1. Start the Web Interface.
2. From the tree, select **Configuration > On Screen Display**.


On Screen Display
Use the On Screen Display panel to configure the different video overlay display paramter.
WARNING
Changing these parameters can cause a conflict with Nextiva Control Center. Nextiva Control Center should be the primary software to change on screen display parameters.
Display Startup Information : Displayed
Display Option : Date And Time
Display Logo : Displayed
Transparency : 230
Tiles
Tile
Starve Mode
Show Transmitter Name
Transmitter Name
1
Screen Saver
Disabled
#
Apply
Cancel

3. In the **Display Startup Information** list, select if you want to show startup information on the monitor. Choose from:
   - Displayed
   - Not Displayed
4. In the **Display Option** list, select the information that you want to display on the monitor. Choose from:
   - Date and Time
   - Uptime
   - Nothing
5. In the **Display Logo** list, choose to show the Verint logo on the monitor during the device start up. Choose from:
   - Displayed
   - Not Displayed

6. In the **Transparency** box, type a value to the set transparency level of the text on the monitor.
7. From the **Tiles** tab, for each tile, set the following:
   a. In the **Starve Mode** list, select what to display on the monitor when there is no video. You can select from:
      - Screen Saver
      - Black
      - Last Decoded Image
   b. In the **Show Transmitter Name** list, select whether or not to show the device name. Choose from the following
   c. In the **Transmitter Name** box, type the name you want to show.
8. Click **Apply**.

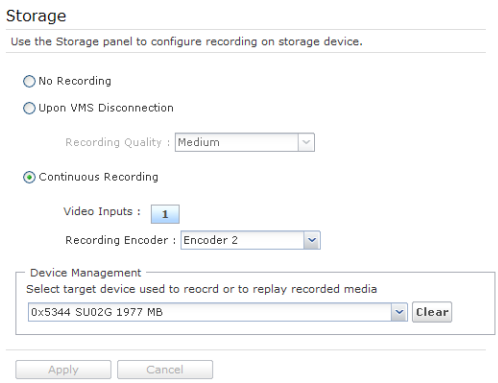
Recording to the Storage Device

The encoders now support storage on the edge - a failover mechanism that ensures video is recorded in case connection with the management software is lost. The single- and dual-port encoders support microSD cards with a maximum capacity of 32 GB. The mulitport encoders support one USB drive.

NOTE: The S1816e-SR does not support recording to a USB drive.

► Perform the following steps:

1. Start the Web Interface.
2. From the tree, select **Configuration > Storage**.



3. Select one of the following:
   - **No recording**: No recording is done on the storage device.
   - **Upon VMS disconnection**: Recording is done when the device is disconnected from Nextiva VMS. Select from one of the following.

- Low: CIF, 88 kbps, MinQ 12, MaxQ 22, CFR, Skip rate 4
- Medium: 2CIF, 172 kbps, MinQ 12, MaxQ 22, CFR, Skip rate 4
- High: 2CIF, 400 kbps, MinQ 12, MaxQ 22, CFR, Skip rate 2

- **Continuous recording**: Recording is done on the storage device at the same time as recording to Nextiva VMS.

4. From the **Device Management** list, select the storage device.

NOTE: If the recording device is full, click **Clear** to delete data from the recording device.

5. Click **Apply**.

Chapter 6

Maintaining and Troubleshooting the Device

This chapter discusses how to perform maintenance and troubleshooting tasks on the S1800e series devices using SConfigurator or the Web Interface. Additional troubleshooting task can be performed using a video management software such Nextiva Video Management Software.

The following topics are discussed:

Firmware Upgrade 105
Device Reboot 107
Factory Default Settings 107
Troubleshooting 109

Firmware Upgrade

Firmware upgrade allows you to install a new firmware of the S1800e device when it becomes available. Updating the firmware allows you access to new features for the device while retaining its configuration.

NOTE: It is recommended to verify the firmware version running on the device after an upgrade.

If the device loses power or a network connection after starting a firmware upgrade, the upgrade process may stop without providing a visual notification.

Depending on when the disconnection occurs, the device may roll back to the previous firmware or apply the new firmware.

Visit the Verint extranet https://online.verint.comto obtain the latest firmware.

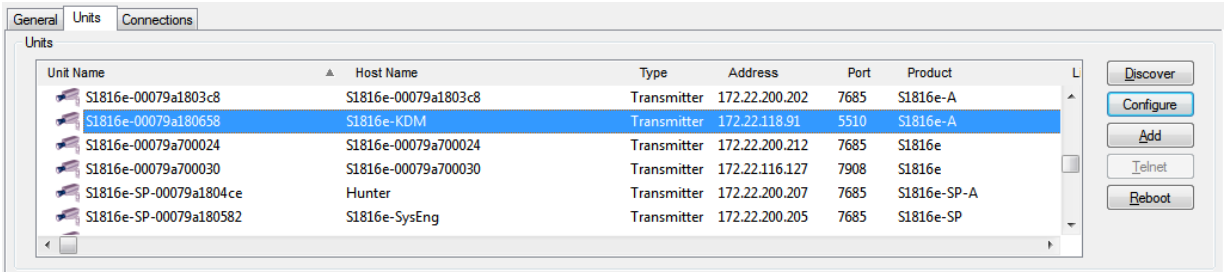
CAUTION: Firmware downgrade is not supported. If you perform a downgrade, any problem encountered will not be covered by the product warranty.

Upgrading Using SConfigurator

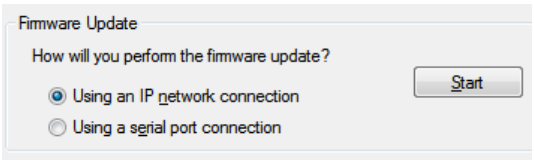
Use the following procedure to upgrade the firmware using SConfigurator.

► Perform the following steps:

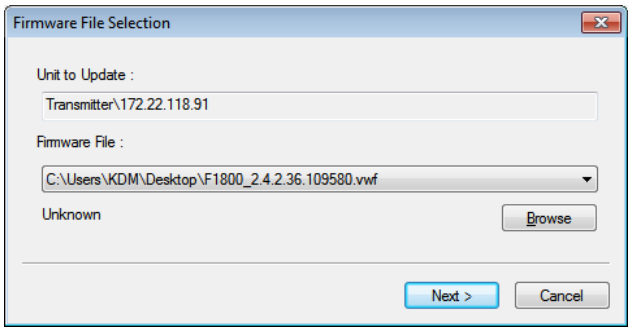
1. Start SConfigurator.
2. Select the **Units** tab, then click **Discover**.
3. Select the Nextiva device.



4. From the **Firmware Update** section, select **Using an IP network connection** .


Firmware Update
How will you perform the firmware update?
Using an IP network connection
Using a serial port connection
Start

5. click **Start**.
6. In the **Firmware File Selection** dialog box, click **Browse** and select the correct firmware file.



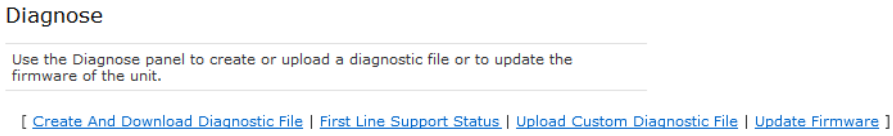
7. Click **Next** to view the verification screen.
8. Click **Start** to begin the firmware update.

Upgrading Using the Web Interface

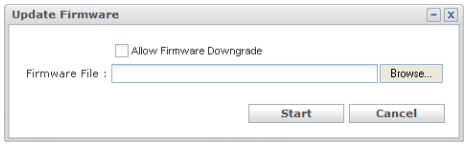
Use the following procedure to upgrade the firmware from the Web Interface.

► Perform the following steps:

1. Start the Web Interface.
2. From the tree, select **Support > Diagnose**.


Diagnose
Use the Diagnose panel to create or upload a diagnostic file or to update the firmware of the unit.
[Create And Download Diagnostic File | First Line Support Status | Upload Custom Diagnostic File | Update Firmware]

3. Click **Update Firmware**.
4. In the **Firmware Update** dialog box, click **Browse** and select the firmware file.



5. Click **Open**.
6. Click **Start** to begin updating the firmware of the unit.

Performing a Batch Firmware Update

With the Nextiva video management software, you can easily update the firmware for multiple devices in the environment at the same time rather than updating them individually. For more information, refer to the Nextiva documentation.

Device Reboot

If the S1800e device does not function the way it should, you can reboot the device to re-initialize the settings. To reboot the device using a video management software, refer to the user guide for instructions.

Rebooting the Device Using SConfigurator

Use the following procedure to reboot the device using SConfigurator.

► Perform the following steps:

1. Start SConfigurator.
2. Select the **Units** tab, then click **Discover**.
3. Select the device, and click **Reboot**.
4. Click **OK**.

Rebooting the Edge Device

Rebooting the devices allows you to re-initialize the settings or apply the new parameters. If you change a parameter that requires a reboot and decline to reboot the Edge device immediately, the icon will flash red until the Edge device is rebooted. To reboot the device using a video management software, refer to the user guide for instructions.

► Perform the following steps:

1. Start the Web Interface.
2. From the Quick Launch bar, click .

Rebooting the Device from the Front Panel

Use the following procedure to reboot the device from the front panel.

► Perform the following steps:

1. On device, press **Reset**.

Factory Default Settings

If after rebooting the device still does not function the way it should, you can load the factory default configuration. This operation will restore the factory default settings to the device and delete all user-defined values.

Restoring the Factory Default Settings Using SConfigurator

Use the following procedure to restore the factory default settings using SConfigurator.

► Perform the following steps:

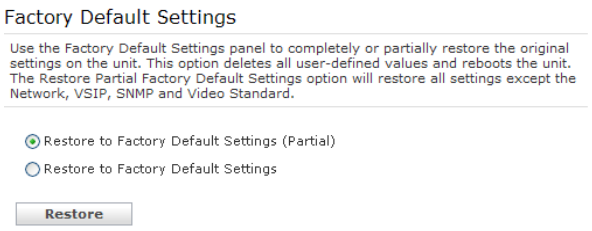
1. Start SConfigurator.
2. Select the **Units** tab, then click **Discover**.
3. Select the device, and click **Configure**.
4. Click **Load Default Settings**.
5. Click **OK**.

Restoring the Factory Default Settings

If after rebooting the device still does not function the way it should, you can load the factory default configuration. This operation will restore the factory default settings to the device and delete all user-defined values.

► Perform the following steps:

1. Start the Web Interface.
2. From the tree, select **Administration > Factory Default Settings**.


Factory Default Settings
Use the Factory Default Settings panel to completely or partially restore the original settings on the unit. This option deletes all user-defined values and reboots the unit. The Restore Partial Factory Default Settings option will restore all settings except the Network, VSIP, SNMP and Video Standard.
Restore to Factory Default Settings (Partial)
Restore to Factory Default Settings
Restore

3. From the **Factory Default Settings** panel, select one of the following:
   - **Restore to Factory Default Settings (Partial)**: to keep the network settings while restoring the default configuration.
   - **Restore to Factory Default Settings**: to restore the unit back to the factory default configuration and remove all user settings.
4. Click **Restore**.

Restoring the Factory Default Settings from the Front Panel

Use the following procedure to restore the factory default settings from the front panel.

► Perform the following steps:

1. Press and hold the **Reset** button on the device, until the status LED flashes red very rapidly.

NOTE: It can take up to 10 seconds for the system status LED to begin flashing red.

2. Hold the button for an additional five seconds, until the status LED turns orange and the video LEDs turn off.

Troubleshooting

The following section describes some basic troubleshooting procedures that you can perform. For any other issues, please contact Verint support.

Using Recovery Mode

A device can reboot into recovery mode in one of the following situations:

- The device failed to boot normally
- The power or network connection to the device is lost during a firmware upgrade

A flashing orange (1 sec. intervals) or flashing orange (3 blinks at 1 sec intervals) and 2 quick red pulses (0.5 sec interval) indicates the device failed to boot normally and has entered recovery mode.

When the device is in recovery mode, the only way you can access the device is using SConfigurator or the Web Interface with reduced functionality.

NOTE: **SConfigurator**

If you are going to use SConfigurator to update the firmware of an device in recovery mode, you need to know the IP address of the device in order to access it.

Web Interface

The Web Interface with reduced functionality is only accessible using the unsecured Hypertext Transfer Protocol (HTTP).

A flashing orange (1 sec. intervals) indicates that the device is using a static IP address. A flashing orange (3 blinks at 1 sec intervals) and 2 quick red pulses (0.5 sec interval) indicates that the device is using the APIPA address format.

Once you have access to an device in recovery mode, the only to exit recovery mode if to update the firmware using a valid firmware file.

Performing a Hardware Reset

Depending on the severity of the situation, you can reboot the device, load its default configuration, or perform both these actions if the device does not function the way is should. You should first start by rebooting the device to see if this restores functionality back to the device. If the device still does not function normally, restore the default configuration.

Losing Connection to a Camera

If the connection to a camera is lost while streaming video to a video management software, the streaming video will display a red/blue frame. On the device, a steady red on any of the video status LEDs indicates that a connection to a camera is lost.

Perform the following tasks:

- Check the connection between the device and the camera
- Check the camera to ensure that it is transmitting video or that it is functioning correctly
- Check the device to ensure that it is functioning correctly (The system status LED provides a visual indication on the current state of the device.
- Look at the event log
- Download a diagnostic file for Verint Technical Support.

SConfigurator cannot find the Device

Symptom: SConfigurator does not see the device on the Common Port or SConfigurator does not discover a device

Action:

1. Verify that you are running the latest version of SConfigurator.
2. Start SConfigurator.
3. In the **General** tab, click **Program Options**.
4. Select the IP address of the correct LAN interface from the **IP Address of the PC** list.
5. Click Common to set the VSIP port to 9541.
6. Ensure that the **Discovery IP Address** is 255.255.255.255; otherwise, click **Reset to Broadcast**.
7. Click **OK**.
8. Click the **Units** tab.
9. Click **Discover**.

If the unit still cannot be discovered, try the following:

- Verify if the LEDs are flashing. If they are all OFF or at least one of them is not flashing, verify the network connectivity.
- If you know the IP address, try to ping it.
- Use install the firmware using SConfigurator or using the Web Interface.
- Perform a hard reset and wait a few minutes before trying to discover it. It will be configured with its APIPA address (if there is no DHCP server) or a new IP address (if there is a DHCP server).

Quality of the Video is Bad

Symptom: The video quality from the device is bad

Action:

- Verify the cable between the camera and the device. Try another cable to see if video quality improves.
- Web status should be checked for lock / unlock status
- From the Web Interface video tab, verify the values for resolution, bit rate and frame rate are supported by the camera.
- If available, try another camera to see if video quality improves.
- Ping the device to check for network latency.
- From the Web Interface, go to the Clip Retrieval page and verify if the quality of the video.Try the same from other workstations on other locations within the same network.
- Check the internal temperature of the device from the Home on the web interface to see if the device is overheating.

Appendix A

Specification and Configuration

Technical Specification 113
Factory Default Configuration 117

Technical Specification

The following table presents the technical specifications for the S1800e series devices:

	S1808e, S1808e-A, S1816e, S1816e-A, S1816e-SP and S1816e-SR	S1801e S1802e	S1801e-R	S1801e-R-HD
Video				
Input	1, 2, 8 or 16 composites, 1 Vpp into 75 ohms NTSC/PAL, BNC female			
Outputs/Connectors			1 composite, 1 Vpp into 75 ohms NTSC/PAL, BNC female	HDMI with an output format of up to 1080i (1920x1080@30fps)
Triple Stream for S1808e and S1816e Up to three streams for the S1816e-SP and S1816e-SR	2 x H.264 and 1 x MPEG-4 streams			
Quadruple Stream		3 x H.264 and 1 x MJPEG streams		
Performance	S1808e and S1816e: D1/30 fps + 2CIF/30 fps + CIF/15 fps on all channels simultaneously S1816e-SP: D1/15 fps (H.264), CIF/15fps (MPEG-4) on all channels simultaneously or 2CIF/15fps, 2CIF/15fps (H.264), CIF/15fps (MPEG-4) on all channels simultaneously	D1/30 fps on all channels simultaneously for up to 10Mbps	4 x D1/30 fps	

	S1808e, S1808e-A, S1816e, S1816e-A, S1816e-SP and S1816e-SR	S1801e S1802e	S1801e-R	S1801e-R-HD
Compression	H.264 Main Profile and MPEG-4 Simple Profile	H.264 Main Profile and MJPEG Simple Profile	H.264 Main Profile	
Resolution	Scalable from: CIF (352 x 240 pixels) to D1 (720 x 480 pixels) NTSC CIF (352 x 288 pixels) to D1 (720 x 576 pixels) PAL	Scalable from: CIF (352 x 240 pixels) to D1 (720 x 480 pixels) NTSC CIF (352 x 288 pixels) to D1 (720 x 576 pixels) PAL		Upscaling from SD to 720p, or 1080i
Bandwidth	Each stream configuration from 9Kbps to 6Mbps			
Maximum Latency	115 msec			
Tiles			Maximum of 4 tiles on 1 monitor Tiles display options: 1×1, 2×2	Maximum of 4 tiles on 1 monitor Tiles display options: 1 ×1, 2×2 or 3 × 2
Network				
Interface 1	RJ-45 Ethernet 10/1000 Mbps Base-T	RJ-45 Ethernet 10/100 Mbps Base-T		
Interface 2 (No Interface 2 on the S1816e-SR)	RJ-45 Ethernet 10/1000 Mbps Base-T (for maintenance)			
Protocols	Transport: RTP/IP, UDP/IP, TCP/IP or multicast IP Others: DNS, NTP, SNMP, v1/v2/v3 (MIB-II), HTTP, HTTPS, DHCP and 802.1x			
Security	SSL-based authentication, password protected, HTTPS			
Serial and USB Ports				
Electrical	Port 1: RS-232 (max. 230 kbps) pluggable screw-terminal strip Port 2: RS-422/485 2/4 wires (max. 230 kbps)	Port 1: RS-232 (max. 230 kbps) pluggable clip-terminal strip or RS-422/485 2/4 wires (max. 230 kbps) pluggable clip-terminal strip		

	S1808e, S1808e-A, S1816e, S1816e-A, S1816e-SP and S1816e-SR	S1801e S1802e	S1801e-R	S1801e-R-HD
	pluggable screw-terminal strip			
Operating Mode	Transparent serial port supporting any asynchronous serial protocol			
USB	1 USB host port (USB drive not included) **NOTE:** The S1816e-SR does not have a USB port.	SDHC MicroSD Card, up to 32 GB (SD card not included)		
Alarm				
	• Input: 4, 8 or 16 dry contacts • Output: 1, 2 or 4 relay contacts (48V AC/DC at 500 mA max.)	Input: 2 dry contacts Output: 1 relay contacts (48V AC/DC at 100 mA max.)		
Audio				
Bi-directional audio	Only for S1808e-A and S1816e-A 3 dB frequency response (1kΩ load): 60 to 3600 Hz, (16Ω load): 350 to 3600 Hz Maximum input voltage (-12 dB input attenuation): 1.4 Vrms Maximum output voltage/power(16Ω load):800mVrms/40 mWMicrophone BIAS voltage: 3V	Input: -46 to -3 dBV into 30 kΩ (line or microphone input) Output: -46 to -3 dBV into 16 Ω min.		
Connectors	S1808e-A: 8 stereo jacks (1/8in.(3.5mm)) S1816e-A: 16 stereo jacks (1/8in.(3.5mm))	1/8in. (3.5mm)		
Power				

	S1808e, S1808e-A, S1816e, S1816e-A, S1816e-SP and S1816e-SR	S1801e S1802e	S1801e-R	S1801e-R-HD
Supply Voltage	12V DC ±10%			
Power Supply		12V DC included except POE model.		
Power Consumption	S1808e: 20W max. (1.7A at 12V DC) S1816e: 25W max. (2.1A at 12V DC) S1816e-SP: 23W max. (2.1A at 12V DC) S1808e-A: 22W max. (2.2A at 12V DC) S1816e-A: 28W max. (2.2A at 12V DC)	Max. 5W	Max. 4W	
Physical				
Enclosure	Metal case with flange mount (black)			
Dimensions	17L x 6.6W x 1.7H in. (430L x 167.68W x 42.6H mm)	4.2L x 3.5W x 1.7H in. (106L x 90W x 42H mm)		
Weight	4.0 lb. (1.8 kg)	9.2 oz. (260 g)		
Operating Temperature	32ºF to 131ºF (0ºC to 55ºC)	32ºF to 140ºF (0ºC to 60ºC) S1801e-PoE: 32ºF to 131ºF (0ºC to 55ºC)		
Humidity	95% non-condensing at 131ºF (55ºC)	95% non-condensing at 140ºF (60ºC)		
Firmware	Embedded Linux-based operating system			
Management				
Configuration and Firmware Upgrade	Supported through Control Center (single device and batch mode firmware upgrade), SConfigurator and Web browser interface (single device firmware upgrade)			
Optional Accessories				
		VRM8: 19-inch rack mount panel for 8 units		
		PSPOE: Power over Ethernet injector		
	PSP1261: Efficiency level V			

	S1808e, S1808e-A, S1816e, S1816e-A, S1816e-SP and S1816e-SR	S1801e S1802e	S1801e-R	S1801e-R-HD
	compliant power supply			
	PSP1282-10: Efficiency level V compliant 19-inch rack mountable power supply for up to 10 devices			
	PSP1282-20: Efficiency level V 19-inch rack mountable power supply for up to 20 devices			
	PDP10-2: 19-inch 1U power distribution rack mount panel to connect up to 10 devices			
	PS1281: 19-inch rack mountable power supply for up to 10 multiport devices.			
Warranty				
3-year limited warranty covering parts and labor (for the Americas). Contact your Verint representative for warranty details for your regions.				

Factory Default Configuration

The S1800e series encoders are programmed at the factory with the following configuration:

Type	Configuration
Serial port	• Bit rate: 4800 bps • Data bits: 8 • Parity: none • Stop bit: 1 • RS-232 • RS-422/485 operating mode: RS-422 4-wire
Access management	• IP firmware update: Enabled • Global security profile: Disabled

<table>
<tr><th>Type</th><th colspan="2">Configuration</th></tr>
<tr><td></td><td colspan="2">• SSL passkey: <empty></td></tr>
<tr><td>Network</td><td colspan="2">DHCP configuration: Enabled</td></tr>
<tr><td>Video settings</td><td>S1808e + S1816e
Encoder 1:
• Compression type: H.264
• Resolution: 4CIF
• Target frame rate: 30 fps (NTSC) / 25 fps (PAL)
• Target bit rate: 1200 kbps
• Minimum quantizer: 14
• Maximum quantizer: 24
Encoder 2:
• Compression type: H.264
• Resolution: CIF
• Target frame rate: 30 fps (NTSC) / 25 fps (PAL)
• Target bit rate: 300 kbps
• Minimum quantizer: 14
• Maximum quantizer: 24
Encoder 3:
• Compression type: MPEG4
• Resolution: CIF
• Target frame rate: 15 fps (NTSC) / 12.5 fps (PAL)
• Target bit rate: 500 kbps
• Minimum quantizer: 2
• Maximum quantizer: 30</td><td>S1816e-SP and S1816e-SR Single H.264
Encoder 1:
• Compression type: H.264
• Resolution: 4CIF
• Target frame rate: 15 fps (NTSC) / 12.5 fps (PAL)
• Target bit rate: 600 kbps
• Minimum quantizer: 14
• Maximum quantizer: 24
Encoder 2:
• Compression type: MPEG4
• Resolution: CIF
• Target frame rate: 15 fps (NTSC) / 12.5 fps (PAL)
• Target bit rate: 500 kbps
• Minimum quantizer: 2
• Maximum quantizer: 30</td></tr>
<tr><td>VSIP</td><td colspan="2">• VSIP Port: 5510
• VSIP Discovery IP Address: 255.255.255.255</td></tr>
</table>

For more information, please visit us at www.verint.com/video_solutions
Americas: info@verint.com
EMEA: marketing.emea@verint.com
APAC: marketing.apac@verint.com
All other trademarks and product names are the property of their respective owners.
The information in this document may be superseded by subsequent documents.